

**SECOND LANGUAGE ACQUISITION OF ARABIC: THE DEVELOPMENT OF  
NEGATION AND INTERROGATION AMONG LEARNERS IN THE U.K.**

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This thesis is my original work and  
of my own execution and authorship.

Haifa Abdallah F. Al-Buanain

To my family

and

To my dear friend Dr. Bahia Al-Baker

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## ABSTRACT

The study is an investigation of Interlanguage (IL) developmental sequences of the acquisition of some aspects of negation and interrogation in Arabic by English-speaking learners in a foreign- language context; (i.e.Britain).

The thesis contains eight chapters. The first chapter discusses the purpose of this research and the reason for selecting the topic.

Chapters two and three survey and discuss the relevant literature. This includes discussions of different approaches to Second Language Acquisition (SLA), of models and hypotheses which have been proposed concerning the nature of learners' language and the process of SLA; and of studies of variability in language, both in general and specifically in the field of SLA.

In chapter four, we analyze the two structures which are to be investigated in the study. First, basic assumptions of Arabic are discussed. Then, a short analysis of the form of each structure is presented in both languages (Arabic and English). In the course of the analysis other issues that are essential for the understanding of the realization of the features in the two languages are discussed.

Chapter five presents first the hypotheses concerning the constraints which may govern the learners' IL(s). The rest of the chapter provides details of the investigation. The subjects are described, the tasks outlined, and details of data collection are described. Finally the criteria used in assessing the learners' responses are discussed.

In chapter six, the results of the analysis are presented. Chapter seven contains the discussion and interpretation of the results in relation to the hypotheses formulated. The final chapter, chapter eight, summarizes the findings of the study in regard to the hypotheses. It also discusses some of the broader implications of the results of the study. Some suggestions for further investigations are also made.

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CHAPTER ONE  
INTRODUCTION

This introductory chapter has the following purposes:

1. to explain the impetus for the study;
2. to outline its context and provide a brief sketch of its methodology;
3. to state the aims this study has set out to fulfill;
4. to present its structure.

1.1. IMPETUS FOR THE STUDY

The interest taken in the study of the nature of language acquisition is reflected in the sizable body of literature related to this area and available, nowadays, in the field of linguistics both in its 'theoretical' and 'applied' forms. Yet, as a review of such literature reveals, our understanding of the complex nature of language acquisition is far from being sufficient. The whole issue looks, therefore, in need of a great deal of further research. This is due to the fact that a "human language is a system of remarkable complexity" (Chomsky 1975: 4).

In this field of Second Language Acquisition (SLA), the need for further systematic and extensive investigation is even more justified. Current trends in Interlanguage (IL) have challenged psychologists and teachers to re-examine their position in language teaching. The view that SL is acquired in 'somehow' natural order has gained impetus in recent years and has far-reaching implications for educational policies and practices. The principal concern of scholars in the field of IL has been to account for and to describe the psychological processes that go on when one produces or understands linguistic data. However, as Corder (1973a: 19) points out:

"It [IL] cannot yet be fully accounted for by anyone within one wholly consistent and comprehensive theory".

The ultimate aim of any new SLA research is to further the understanding of this science beyond the level it has reached at

the present time. Yet, as Corder (1984b) has observed:

"we are [...] seriously liable to the criticism that we are altogether too English-oriented in our work. [...]. We want to look at the acquisition of many more languages that we have done so far, before we start making any serious general claims of one sort or another" (344).

Corder's remark is pertinent in the case of Arabic. At the present time the studies of the acquisition of Arabic as a first language, let alone Arabic as a second language (ASL), are quite insignificant (e.g. Omar, 1973 and Samdi, 1979 (for first language acquisition); Rumman, 1976 and Al-Ani, 1971 (for ASL)). The present study, in the view of the writer, is the first attempt to examine the study of the developmental sequences of ASL, so that it can take its rightful place in SLA studies.

#### 1.2. CONTEXT OF THE STUDY

The study is an investigation of IL developmental sequences of the acquisition of some aspects of Arabic by English-speaking learners in a foreign language context (i.e. Britain). The learners, whose language provides the corpus of data, are all students in different British Universities. They are all learning Arabic through specialized ASL instruction and various degrees of exposure to Arabic in a host-language environment.

This study is a cross-sectional one, since it examines a cross-section of learners at different levels of learning (ranging from beginners to advanced). The assumption of such a design is that by examining the subjects at different stages of exposure to the target language, we shall be able to discover the developmental stages the ASL learners go through in their acquisition of the linguistic structure we are investigating.

Two structural areas within Arabic syntax were singled out for the detailed investigation which is necessary for deepening our understanding of learners' language and the learning process. The areas chosen were Interrogation and Negation. These two areas of syntax were chosen because:

- (1) questions and negations, as basic components of language, provide rich data for the study of syntax as well as semantics (and ultimately, signs in general);
- (2) they have been much studied in the case of English and other languages;
- (3) they are taught early, also they are 'easy' to learn with straight-forward pragmatic and semantic notions (Krashen 1981);
- (4) most importantly, asking and negating are essential for communication even at very early stages.

In order to explain a possible IL system, a comparison of learners' performance on two different tasks was made.

### 1.3. GENERAL AIMS

The investigation is an attempt to contribute further to our understanding of foreign language acquisition processes. The aims of the study, briefly stated, are to determine whether:

1. the IL development towards the target is a recreative rather than a restructuring system;
2. the linguistic behaviours of different learners are systematic and rule-governed;
3. the mother tongue influences SLA process;
4. the developmental sequences can be identified for each of the syntactic areas studied.
5. the variability of IL can be defined both at the synchronic level (measured by the learners' performance in different tasks), and the diachronic level (development over time);
6. the strategies used to solve the two tasks are similar.

### 1.4. STRUCTURE OF THE THESIS

Altogether the thesis contains eight Chapters. The study starts with a review of literature. This includes discussions of different approaches to SLA (Section 2.2.), of models and hypotheses which have been proposed concerning the nature of learners' language and the process of SLA (Section 3.1. and 3.2.), and of studies of variability in language, both in general and specifically in the field of SLA (Section 3.3.). After the discussions of these aspects, the present state of SLA research

is outlined. The final section (3.5.) integrates the previous discussions reviewed into the present investigation.

In Chapter Four, we analyze the two structures which are to be investigated in the study. First, basic assumptions of Arabic are discussed. Then a short analysis of the form of each structure is presented in both languages (Arabic and English). In the course of the analysis, other relevant issues that are essential for the understanding of the realization of the features in the two languages, are discussed.

Chapter Five presents the hypotheses concerning the constraints which may govern the learners' IL. The rest of the Chapter is devoted to providing details of the study. The subjects are described (Section 5.2.), the tasks outlined (5.3.) and details of data collection are described. Finally the criteria used in assessing the learners' responses are discussed.

In Chapter Six, the results of the investigation are presented. Chapter Seven contains the discussion and interpretation of the results in relation to the hypotheses formulated. The final chapter, Chapter Eight, summarizes the findings of the study in regard to the hypotheses. It also discusses some of the broader implications of the results of the study. Following this, some suggestions for further investigations are outlined.

## CHAPTER TWO

### REVIEW OF EMPIRICAL SLA STUDIES

#### 2.0. INTRODUCTION

The purpose of this Chapter is to outline and discuss the theoretical and empirical background concerning aspects of Second Language Acquisition (hereafter SLA). Ideas and research that have provided the framework for SLA are discussed in Section 2.1. Section 2.2. deals with process and production in second language studies ( hereafter SL). Here, the important empirical studies which have contributed to the development of hypotheses and models of SLA, are presented. The final Section 2.2.2.7. concludes that different SLA studies are phases of one goal.

#### 2.1. THEORETICAL BACKGROUND

Much of the change of focus in the teaching and learning of a second language which had its roots in the 1960's, led people to rethink about the relationships between teaching and learning. Not only this, but indeed to think more about the nature of the learning process itself. As an introduction, it is necessary, therefore, to give a brief resume of the theoretical background that had provided the framework for SLA research.

Nativist theorists (e.g. Chomsky 1959, 1965; Lenneberg 1967; McNeill 1966, 1971), argued cogently that the child is not a completely empty receptacle, but that he/she brings an active participant and an innate knowledge to the process of acquisition. Chomsky's (1959) 'Review of B.F. Skinner's verbal behaviour' questioned the very core of behaviourist theory (Skinner 1957) as an account of language learning. Chomsky viewed language acquisition as a kind of theory reconstruction that the child undertakes successfully without being given the instruction explicitly and only from small amounts of language data.<sup>1</sup> The

---

1. This view of L1 acquisition is essential to Dulay and Burt's (1973) L1 = L2 hypothesis as well as their theoretical model of SLA: Creative Construction (Sections 2.2.2.2; 2.2.2.3.4.1; 2.3.2.).



child's ability to 'create' language comes from his/her possession of the language acquisition device (LAD). A LAD would contain a set of linguistic universals presumed to be innate and genetically transmitted.

McNeill (1966) argues that one property of the LAD is the ability to engage in constant evaluation of the simplest possible system out of the linguistic data. The child is all the time engaged in analyzing the input data, framing hypotheses about the linguistic structures and systems, reviewing and modifying them against new data.

This is a process which is a gradual and progressive movement towards the complex adult grammar, i.e., target language (henceforth TL). The process is natural, systematic and unconscious. Lenneberg (1967), therefore, speaks about "latent language structure" which according to him: (a) is an already formulated arrangement in the brain; (b) is the biological counterpart to universal grammar; and (c) is transformed by the infant into the realized structure of a particular grammar in accordance with certain maturational stages (pp. 374-379). Chomsky is of the opinion that "universals are intrinsic properties of the language acquisition system, these providing a schema that is applied to data and that determines in a highly restricted way the general form" (1965:53). The language properties inherent in the human mind make up a 'Universal Grammar' which consists, not of particular rules or of a particular grammar, but of a set of general principles that apply to all grammars and that leave certain parameters open; one of the parameters that is open in universal grammar is the pro-drop parameter which is concerned roughly speaking with the relationship of government between subjects and verbs (Chomsky, 1981). Universal Grammar sets the limits within which human languages can vary.

An important contribution of this school is the notion of language as a rule-governed system; each language is viewed to be a "system of systems". In other words language is a structured

organization of the rules of syntax, of morphology, of semantics, phonology and morphophonemics; further, these systems are ordered within themselves. The finite system of rules which form the 'intuitive grammar' of a native speaker generates an infinite number of sentences in production, comprehension, detection of ambiguity, synonymy etc. (Transformational Generative Grammar: Chomsky, 1965).

The basic problem, however, with the Generativist/Nativist approach is that it tends to create a 'mind-set' rather difficult to adapt to the kinds of problems in language acquisition.

Chomsky's response<sup>2</sup> to a question by Harnad (Harnad et al. 1976: 57) indicates that the 'mind-set' may be so rigid that when problems can no longer be ignored, they are verbalized away rather than grappled with. It is well believed that human beings get language as we get a heart and arms, yet this is not all. Quite simply, if acquiring or learning a language depends solely on the 'genetic programme' human beings possess, then, a child (or a learner) left without being exposed to any language data, would acquire a language. This is absolutely not true, since there have been cases in history, when more than an individual was found, who (apart from making noises such as screaming and shouting) could not speak any human language, merely because he/she had not been exposed to any human language data. Acquiring/learning a language consists of adapting the genetic programme, (i.e. innate ability) revising it, adjusting it to fit the realities of the culture language he/she appears to encounter (Bickerton 1981: 297). Cook

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2. The Exchange between Harnad (H) and Chomsky (C) is as follows:  
 "(H) Let me just ask a question [...]. If some rules you have described constitute universal constraints on all languages, yet they are not learned [...] how did language get that way? (C) Well, it seems to me that would be asking the question how does the heart get that way? I mean, we don't learn to have a heart, we don't learn to have arms rather than wings? What is interesting to me is that the question should be asked. It seems to be a natural question, everyone asks it. And I think we should ask why people ask it". (Harnad et al. 1976: 57).

(1985: 4) defines language acquisition as "the growth of the mental organ of language triggered by certain language experiences".

Additionally, the Nativists' belief was that "grammatical relations that determine semantic interpretation" (Chomsky 1965: 141) were defined by the phrase structure rules of transformational grammar. Thus, their preoccupation with the formal syntax (rules and structure of child's speech) was inadequate to fully account for the complexities of language learning since many were not taken into account. "There was no attention to linguistic function expressions" [Emphasis added] (Bloom 1970: 1). By the beginning of the seventies, such an approach was considered somehow 'incomplete' and the need was felt for 'rich' interpretations, which would place Semantics at the centre of the language acquisition process (e.g. Bloom 1970, Brown, 1973). Bloom's (1970) analysis of child's intuitive knowledge of a linguistic code, is one of the pioneering works which attempted to reach the meaning of children's sentences, by focusing on the correlation of linguistic (utterances) and contextual (situation and behaviour that occurred with the utterances) features. By so doing, she broke away from the restrictions placed by the previous Behaviourist and Nativist theories.

In her work, Bloom showed that children identified certain grammatical relationships and syntactic features with the environmental, behavioural contexts, (i.e. meaning and function). She believed that "semantic intentions are reflected in the word order chosen by the child". Moreover, psychologists like Slobin (1973) postulated that the cognitive development of child precedes his/her semantic learning and knowledge of semantic relationship such as possession, location, agent, action and so forth; which are then reflected in linguistic expressions. Brown (1973: 63) justified his adaptation of a semantic characterization which he called "rich interpretation", by stating that it is a "superior approach".

The study of (a) semantic relationships in child's speech; and (b) the development of semantic theories and language universals (e.g. Fillmore, 1968; Lyons, 1966) led scholars to speak about semantic features common to all the world's languages as opposed to formal universals proposed by Chomsky (1965). For instance, Lyons (1966: 211-223), asserts that every grammar requires such categories as Noun, Predicator, Sentence; but other grammatical categories and features may be differently arranged in various languages. Along with (a) and (b), the contribution of psycholinguistics helped expose remarkable developmental universals that formerly had gone unremarked.

As a consequence, SL scholars and researchers started to search for an adequate theory and/model valid for learning and teaching of SLs. Their studies were (and are still) motivated by the desire to understand more about the mechanisms involved in the learning of SLs (Sections 2.2., 3.1. and 3.2.).

## 2.2. PROCESS AND PRODUCT IN SL STUDIES

### 2.2.1. Contrastive Analysis Studies

The Contrastive Analysis Hypothesis (CAH) is one of the earliest models that tried to account for SL learning. It is mainly based on the views of the behaviourist psychologist Skinner<sup>3</sup> during the fifties. He and his colleagues viewed language learning essentially as the formation of habits. Following this theory, applied linguists sought to identify areas of difficulty for the SL learner by systematically comparing a description of the learner's native language (henceforth NL) with that of the TL. As James (1980), noted:

"Contrastivists see it as their goal to explain certain aspects of L2 learning. Their means are descriptive accounts of the learner's L1 and the L2 to be learnt, and techniques for the comparison of these descriptions. In other words, the goal belongs to psychology while the means are derived from linguistic science" (p.27).

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3. There are also Skinner's forerunners e.g. Thorndike, Pavlov and others (Bolles, 1975).

Although several prominent linguists and pioneers in the field of target language pedagogy, including Ibn Khaldun, Palmer and Sweet, were all aware of the "pull of the mother tongue" in learning a TL, it was Fries<sup>4</sup> (1945) who firmly established contrastive linguistic analysis as an integral component of the methodology of TL teaching, declaring that:-

"The most effective materials (for foreign language teaching) are based upon a scientific description of the language to be learned carefully compared with a parallel description of the native language of the learner" (1945: 9).

Weinreich's (1953) study as well as that of Haugen (1953) which investigated bilingualism and the effect of bilingualism on the language use of bilinguals, had a crucial influence on the foundation of CA. Weinreich discovered a phenomenon which he called 'interference'. Interference was identified by him as:

"those instances of deviations from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language (i.e., as a result of language contact".<sup>5</sup> (1953: 1).

This same phenomenon was also found by Haugen in his study of Norwegian community in North America. Haugen (1953) described the phenomenon as "linguistic borrowing" which can "be unambiguously defined as the attempt by a speaker to produce in one language patterns which he has learned in another" (p. 363).

Interference is regarded as a result of transfer. That is the learners projection of rules from his native language to the target language. The relationship between transfer and interference is further explained by di Pietro (1968), when he states that "the process of interpreting the particular grammar of one language in the terms of another is called transfer. The mistakes

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4. Fries was influenced by the ethnographic theory of language proposed by Malinowski (1935). The latter emphasized the necessity of studying language within its social framework.

5. Some might raise the issue of the difference between SLA and language in contact. Nowadays, however, there is a great influence from Creolinguistics on SL Research.

that result from this process are said to be due to interference". (p. 6 ). The ability of CA to predict interference problems is then based on the transfer theory.

Obviously, the concept of transfer was very important to early contrastive analysts and theorists, to the extent that all errors in SL learning were claimed to be attributed to patterns of the native language. From this it follows that if the two languages in question are similar or share similar features (in whatever way this similarity can be defined), the difficulty of learning is reduced (i.e. positive transfer). On the other hand, if two languages differ greatly, the learning task is greater and we can then speak of negative transfer. As Lado (1957) claims:-

"Individuals tend to transfer the forms and meanings and the distribution of forms and meanings of their native language and culture to the foreign language and culture" (p.2 ).

Therefore, to the early contrastive theorists a careful comparison of the native language and the target language was the answer to all the problems of SL learning. Ferguson (in his Introduction to Moulton, 1962, and elsewhere) states that "a careful contrastive analysis of two languages offers an excellent basis for the preparation of instructional materials". (Cited in Whitman 1970: 191).

Such an approach to learning, however, reflects the period in which the hypothesis developed; that is the structuralist-behaviourist theory. First, when recalling Bloomfield's original development of structuralist analysis, we will clearly notice that it reflects a behaviourist theory of language acquisition.<sup>6</sup> Structural linguistics was based on an abstract view of language; which is that language is composed of discrete structural levels. These levels can be separated for analysis and the ultimate

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6. Bloomfield was influenced by the behaviourist theory of Stimulus and Response (See Bloomfield, 1935: 21-41).



concern of the structuralist was the systematic analysis of these structures. Early theorists believed that it would be possible, using the structural framework to carry out a systematic comparison of the two languages in question (i.e., NL and TL), which would reveal the problems that learners are likely to encounter.

Second, Lado's (1957) proposal of CA is also deep-rooted in the behaviourist theory of language learning. As previously mentioned, the behaviourist approach believes that language acquisition is a product of constant exposure to language data, with the learning process established through a stimulus-response conditioning. To the behaviourists, learning, in general, is basically a process of forming automatic habits (e.g. Bolles, 1975). Language learning then is regarded as a habit formation since sufficient reinforcement of the stimulus leads to the acquisition of a set of habits. First language (i.e. an old habit) either facilitates or hinders the formation of learning a SL (i.e. a new habit), depending on the similarities or differences, respectively, between the first and second language.

#### 2.2.1.1. Strong and Weak CAH

Since the late sixties, there has been a considerable debate regarding the value of the CAH. As a result of this debate two versions of the hypothesis have emerged: a strong version and a weak one. The strong version, identified more with early CAH, claims that all errors in SL learning are attributed directly to the differences between the NL and the TL. The implication of the strong version CAH is that errors can be avoided since they can be predicted and, then, it is the duty of language pedagogy to eliminate them. This view is clear in Banathy *et al.*, (1966), who, adopting Lado's view of SL teaching, claim that the change that has to take place in the language behaviour of a foreign language student can be:

"equated with the differences between the structure of the student's native language and culture and that of the target language and culture. The task of the writer of a foreign language teaching programme is to develop materials which will be based on a statement of these

differences; the task of the foreign language teacher is to be prepared to teach them, the task of the student is to learn them" (p. 37).

The strong version of the CAH is clearly stated by Lee (1968: 186). CA is based on the assumption, he argues; (1) that the prime cause, or even the sole cause, of difficulty and error in foreign language learning is interference coming from the learner's NL; (2) that the difficulties are chiefly, or wholly, due to the differences between the two languages (i.e. NL and TL); (3) that the greater these differences are, the more acute the learning difficulties will be; (4) that the results of a comparison between the two languages are needed to predict the difficulties and errors which will occur in learning the SL. Lastly (5) that what there is to teach can best be found by comparing the two languages and then subtracting what is common to them, so that "what the student has to learn equals the sum of the differences established by the contrastive analysis".

Corder (1967) drew attention to the fact which has since become well known, that the CAH, and in particular, the strong version does not account for many of the learners' errors that can be observed in SLA. In fact, it has been shown, from many studies (e.g. Richards (ed.) 1974b), that the strong version with its reliance on the sole ability of CA to predict problems and errors in SL learning is untenable, because errors and deviations can be the result of different sources apart from the mother tongue; as for example, from the TL forms itself and through the learner-learning strategies.

As a result of the perceived weakness of the strong version of CAH, modifications become necessary. Thus, less enthusiastic estimates on the value of contrastive analysis can be found in Catford (1968); Lee (1968) and Wardaugh (1970), who feel that a contrastive analysis cannot be used to predict language learning problems, although it may be useful in explaining known or discovered difficulties. This is the weak version of the hypothesis which is a model with explanatory as opposed to predictive power.



It is claimed that we can look at errors once they have been made and offer an explanation of why these errors occurred based on a CA of that area of the linguistic level<sup>7</sup> in question, without necessarily considering the NL.

The starting point of the weak version is the evidence of the linguistic transfer and the assumption is that an evaluation of the errors will reveal the learners' difficulties. Then, reference will be made to the two language systems only in order to explain any observed interference phenomenon. With this modification the weak version can be useful in accounting for the learner's errors. It is in this sense that the CAH is regarded as a subcomponent of Error Analysis.

#### 2.2.1.2. Remarks Pro and Against CAH

SLA research over the last few decades has contributed much towards a refinement of the CAH as originally proposed by Lado (1957); which has been criticized heavily. The CA treatment of errors that was popular throughout the 1960s, rested upon a comparison of the learners' two languages (NL and TL). As previously mentioned, it was thought that the CA of the two languages would predict the areas in the TL that would pose the most difficult problems. However, given the nature of SLA: vast and yet unfathomably complex, it has become evident that contrastive descriptions based on adult structures of the SL are unable to handle learners' data (e.g. Duskova 1969; Wardaugh, 1970; Richards, 1971). CAH was criticized as being too simple and inadequate to account for such a complex activity as language acquisition. The argument is that language acquisition is so complex that it cannot be accounted for by the process of imitation and conditioning alone as it is claimed by behaviourists.

In addition, CAH was criticized as having a doubtful validity in attempts to predict points of facilitation or interference. Thus,

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7. (i.e. Phonology, Syntax and Semantics).

researchers as Dulay and Burt (1972) criticized the work of Weinreich (1953) as well as Haugen's (1953). Dulay and Burt (ibid) stated that:

"It seems that the work of Weinreich and Haugen, although fundamental to research in language shift, does not speak to the phenomenon of the first language interference that we and the CA proponents are concerned with" (p. 104).

Evidence from Dulay and Burt's studies points out that the portion of errors made reflecting first language structure confirm "in part the product level of the CAH" but "is not enough to justify the process level which is questionable on theoretical grounds". (Dulay and Burt 1974b). Contrary to the claims of the CAH, George (1972), found that only one third of the deviant sentences from SL learners could be attributed to language transfer, a similar figure to that is given by Lance (1969) and Brudhiprabha (1972). (Cited in Dulay and Burt 1974b: 105). Dulay, Burt and Krashen (1982) argue that the learner's first language plays no significant part in the learning of the SL:

"Studies show , for example, that only 5% of the grammatical errors children make and at most 20% of the ones adult make can be traced to crossover from the first language" (p.5.).

Furthermore, contrary to the notion strongly claimed by CAH, it is well known that differences between languages alone were found to be inadequate as an explanation of learning outcomes. Whitman and Jackson, (1972) found in their study of 2500 Japanese learning English as an SL, that similarities between Japanese and English were found to cause the greatest problems. This same finding was also confirmed by subsequent researchers. Wode (1978) stated that "Only if L1 and L2 have structures meeting a crucial similarity measure will there be interference, i.e. reliance on prior L1 knowledge" (p. 116).

Interference has not, however, been rejected out of hand by most writers although the general contention is that interference can occur due to factors other than the native language and it

certainly cannot account for all learners' errors. As Richards and Sampson (1974) put it:

"Interference analysis<sup>8</sup> tends to be from the deviant sentence back to the mother tongue. CA works the other way, predicting errors by comparing the linguistic system of the mother tongue and the target language". (p. 5.)

This view is also expressed by Dušková (1969) and Richards (1971).

Accepting, however, the notion of interference, then it should be clear that it affects the different linguistic levels (e.g. phonology and syntax) variably. Studies of SLA, have tended to imply that the CAH may be most predictive at the level of phonology and least predictive at the syntactic level. As Dulay *et al.* (1982) put it "Pronunciation is more susceptible to first language crossover than grammar" (p. 5.). Thus, the relevance of the transfer notion and consequently of CA will depend on what aspect of language we are considering. (The concept of transfer will be discussed in Learning Strategies: Section 7.2.2.).

Turning again to the main topic (i.e. CAH), from the literature, we notice that some scholars go as far as suggesting we disregard CA, when dealing with SL problems altogether (e.g. Dulay and Burt, 1973, 1974a and 1974c). Strevens (1970) argues that contrastive studies are of no use for language teaching, because in the first place, a complete analysis involving only two languages is already an extremely difficult and painstaking task, and, in the second all of this is not worth that much effort, as any experienced language teacher knows where errors mostly occur, anyway. On the other hand, others like Wode (1984) describe such views as "certainly unjustified" (p. 25). Zobl (1982) writes about:

"refinement of CAH that has been made possible by the mounting evidence point to the indirect and highly constrained nature of L1 influence" (p. 169).

He draws the attention to the fact that CA has been the basis for

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8. Interference here does not mean negative transfer; on the contrary it is what Selinker refers to as transfer. Thus, Interference Analysis = weak version of CAH; whereas CA = strong version of CAH.

several studies such as Schachter (1974) and Hakuta (1974). He argues that in these studies (Schachter (1974) in particular),

"marked structural contrast, for example, tends to promote avoidance or under-representation rather than a mechanical imposition of L1 structures" (Zobl 1982).

In her study, Schachter (1974) used CA approach to investigate the acquisition of English Relative Clauses (RC) by speakers of different linguistic background: Arabic, Chinese, Japanese, and Persian. By comparing the structures of the native language with that of the TL, she was able to predict probable areas of difficulty, each language group would have problems with placement of the RC. In addition, Schachter discusses what she called the avoidance phenomenon. She found that the Persian and Arab learners produced more RCs than the Chinese and Japanese learners. She argued that the learners' difficulty with this structure was seen not in the number of errors they made, but in the small number of their RC production, therefore, in order to account for this finding she hypothesized the avoidance phenomenon:

The value of avoidance phenomenon in backing up the CAH is more useful on the syntactic level where the learner is able to paraphrase to avoid difficult constructions, but not on the phonological level where there is no similar escape. Similar escape, here, means paraphrasing since learners avoiding production of difficult sounds may remain silent or pause, but it is not possible to avoid producing the sounds by paraphrasing.

In addition to the prediction of difficulties in SL learning, CA was also used to classify the problems according to degree of difficulties. Stockwell et al (1965), in their contrastive study of English and Spanish, predicted likely sources of interference based on the differences between the systems of the two languages. They also established a hierarchy of learning difficulties. Their

"assignment of an item in a hierarchy of learning difficulties is based on the premise that (positive) transfer from one language to another[....] becomes more

difficult as the correspondence weakness" (292).

The setting up of hierarchies of difficulty as well as the attempt to predict difficulties have been the subject of a lot of criticisms. Stockwell (1968) himself in a later review of these criticisms reiterated the usefulness of CA studies and also suggested that the confused state of syntactic and semantic theory prevent writing the ideal contrastive grammar (p. 22).

Traditional contrastive analysis is based on a very static view of the interlingual contrasts. This static view is shown in a number of ways. First, since the descriptions of individual languages are based mainly on the scholar's competence or normative descriptions, the variation of natural languages is disregarded. Second, the learner's position, in relation to the TL (as well as the NL), is regarded as stable; but an elementary learner is in a position which differs from that of an advanced one and a child's position is different from that of an adult. Thus, while the proficiency in the foreign language increases, the learner's stand in relation to both languages changes. Third, not much attention has been paid to the roles of the speaker and the learner and the constant shifting of these roles in a communicative situation (Sajavaara, 1981).

CA, in spite of all its weaknesses and the criticisms made against it, still has its usefulness. It has been the basis of many teacher manuals e.g. English-Arabic; English-German etc.; and the importance of such materials is obvious in their wide usage by teachers, at least for consultation. For example, even if only to let teachers have better understanding of why their students have difficulty in certain areas of pronunciation of a target language (e.g. English, Arabic).

Moreover, Wode, (1984) describes CA as basically concerned with describing languages or language **systems** and thus to him "is at the very heart of linguistic methodology" (p. 25). He, rightly, suggests that the major misunderstanding relates to the implica-

tion that CA should be a language theory and "that is exactly what it is not" (p. 25). Since CA describes different linguistic structures, its methodology allows linguists to relate different language systems to each other. CA, however, does not allow for any kind of prediction on 'how' the learner will resolve clashes between two linguistic systems (NL and TL) and that is why the CA is not a language learning theory. Wode goes on by stating that:-

" [...] this does not mean that CA is useless for L2 problems. On the contrary, it is an indispensable part of any attempt to devise a theory of language acquisition in general or of naturalistic L2 acquisition in particular" (p. 25).

CA also has its theoretical value, because it provides useful and helpful insights into language structure and language teaching theories. The increasing recognition that differences between the NL and the TL is not the only source of learner's errors (e.g. Dušková (1969); Wardaugh (1970); Richards (1971) and others), has led to the emergence of Error Analysis. As a consequence, error analysis has come away with a rich source of explanation for the many as yet unexplained but frequently observed students' errors.

### 2.2.2. IL Studies

Evidence that SL learners may acquire an SL without any regard to the mother tongue (e.g. Dulay and Burt, 1972) soon became available. It was suggested that SL learners may be moving through a sequence of developmental stages without any regard to the L1 structure. Felix (1980a) pointed out the fact that structural similarity between the learner's native language and ungrammatical utterances produced by the learner in L2 does not constitute proof that interference is the cause of the errors "many originate from deeper regularities of the acquisition process" (p. 93). He, justly, drew attention to an important problem which is that:

"we do not possess well-established criteria by which it can be decided in a unique and principled way which ungrammatical utterances are demonstrably instances of language transfer" (p. 94).



With this development new types of analysis began to emerge.

#### 2.2.2.1. Error Analysis (EA)

It is a linguistic activity that aims at systematically describing errors made by learners of a foreign language in their 'output'; it goes beyond this to give us insights about the psycholinguistic process of language learning, since learners reproduce some of their 'intake'. In EA a prospective comparison is made between the learner's NL and the TL.

##### 2.2.2.1.1. Error in EA

Corder (1967) proposed that "the learner's errors are evidence of this system [L] and are themselves systematic". Since then, researchers and teachers in numerous countries have spent countless hours extracting errors from students' composition and conversation and used them as a base for theory construction and classroom practice.

The instant and widespread appeal of EA, in the late 1960s and early 1970s, was a reaction not only to CA; but also the prevailing neo-behaviourist learning theory of that period as well as to language teaching methods (e.g. the Audio-Lingual method) based on both. The prevalent view of errors based on the behaviourist approach was that they were undesirable random deviations which are an indication that the correct 'habits' of the TL had not been acquired. It was also believed that errors could be avoided and if they surfaced then, the cure was through intensive drills of correct forms.

Errors, however, are the flawed side of learner's speech or writing. They are those parts of conversation or composition that deviate from some selected norm of natural language performance. Making errors is an inevitable part of learning, since people cannot learn languages without first systematically committing errors. Thus, they are different from mistakes which are unsystematic deviations. Mistakes can be due to memory lapses, physical states and so forth; of which the speaker is

immediately aware; for example, slips of the tongue. This important distinction between errors and mistakes is Corder's (1967).

A remark to make here is that sometimes researchers distinguish between errors caused by factors such as fatigue and inattention (what Chomsky (1965) called "performance" factors) and errors resulting from lack of knowledge of the rules of the TL (i.e. "competence" in Chomsky's (1965) terminology). In SL literature performance errors have been called mistakes, while the term errors was reserved for the systematic deviations due to the learner's still developing knowledge of the SL rule system. Whilst the distinction between performance and competence errors is extremely important, it is often very difficult to determine the nature of a deviation. In this study errors will be used to refer to any deviation from a selected norm of language performance (i.e. we do not restrict the term 'errors' to competence-based deviations). Following Corder (1967), the crucial difference is being systematic or non-systematic.

Dulay et al. (1982) discuss four types of errors: developmental, interlingual, ambiguous and others errors. Developmental errors are "similar to those made by children learning a target language as their first language" (p. 165). Such errors led to Dulay and Burt's L2 = L1 hypothesis (refer to section 2.2.2.3.5.1.). However, one of the difficulties inherent in comparing L2 to L1 errors, is the reliance on the reported findings in the L1 acquisition literature. That an error is not reported in the literature does not always guarantee that it is not produced by children acquiring a first language. In her discussion of research methods, Cazden (1972), justly, points out that learners may very well produce structures when researchers are not there to collect them.

Interlingual errors are similar in structure to a semantically equivalent phrase or sentence in the learner's NL, (i.e. what Selinker calls interference (negative transfer) or transfer). To



identify interlingual errors, researchers usually translate the learner's production (e.g. phrases, sentences etc.) into the learner's NL to examine whether similarities exist (which is more or less what the weak version of CAH does).

The third type is ambiguous errors, which are those that could be classified either as developmental or interlingual; since they reflect the learner's NL structure and at the same time are of the type found in the speech of children acquiring their first language. The last type of error is categorized as others. Dulay and Burt (1973) classified such errors as "unique". Errors of this type are items that do not fit into any other category. Furthermore, they are unique to SL learners.

The above mentioned types of errors are based on a comparative taxonomy classification in which comparisons between the structure of SL errors and certain other types of construction (e.g. errors reported for children acquiring their first language) are made. Another sort of classification is surface strategy taxonomy. It reveals the specific and systematic ways surface structures are altered, for example, learners may omit necessary items or add unnecessary ones; they may misform items or misorder them. Analyzing errors from this taxonomy helps researchers concerned with identifying cognitive processes that underlie the learner's language system.

Studying learner's errors serves two major purposes. It provides data from which inferences about the language learning process can be made. Furthermore, it indicates the points where the language system is easily subject to disturbances or especially difficult to be acquired.

#### 2.2.2.1.2. Learner's Language System

Resulting from EA which has focussed more on the learner and what his errors tell us about his SLA, a different view of native and second language acquisition has emerged. In this approach, the learner's behaviour is characterized as a type of rule-

governed creativity in which both native and second language acquisition are viewed as a dynamic process involving the active participation of the learner. Thus, error analysts speak of the development of "Transitional Competence" (Corder: 1971b); "Idiosyncratic Dialects" (Corder: 1971a); "Approximative Systems" (Nemser: 1971); "Interlanguage" (Selinker; 1972) or a "Language-Learner Language" (Corder: 1978), to describe the evolving system of the learner language as he/she progresses from zero competence to native speaker competence in the TL. Common to these theoretical notions proposed by Corder, Nemser and Selinker, is the idea that SL learners actively and continually revise their underlying grammatical systems as they move to the TL. In other words, the learner's performance is a means of testing his/her hypotheses about the structures of the TL. Corder (1981a) suggests three main factors condition the learner's hypotheses. These factors comprise what Corder refers to as the learner's "Interlanguage (IL) background". First, the experience that the learner brings to SL learning; second, the current data to which the learner is exposed; and finally, the learner's language acquisition strategies.

One fundamental feature of IL is that it is not a stable system. On the contrary, it is a dynamic system which undergoes constant changes as learning takes place. In this sense, the concept of linguistic homogeneity proposed by Chomsky (1965), cannot adequately describe the language behaviour since it is far from homogeneous, (Corder, 1978). Although learner-language system is a dynamic process, it is systematic. This, however, is no contradiction. When a system is systematic this means that there is evidence of a non-random use of forms, so that it is possible to formulate rules which describe it. In many cases, particularly in linguistics, it is necessary to be able to describe systems which are dynamic. For instance, to describe a language change in Socio-linguistic or Historical Linguistics. As Corder (1978a) rightly points out such dynamic systems cannot be described "by means of the categorical rules". Dynamic systems only allow for non-categorical use of features, such as variable rules (Labov, 1968). Consequently, variability is found in learner's language

system, a notion which has led many researchers and scholars to talk about Interlanguages rather than Interlanguage. Variability could be the result of different variables, e.g. transfer, age, different environments and other factors (refer to sections 2.2.2.5., and 2.2.2.6.).

This view of a learner's language system does not deny the possibilities of language transfer, either negative (i.e. interference) or positive, but claims that the difference between learner's NL forms and the corresponding acceptable TL forms cannot always be explained simply by transfer. The IL, differing from both the NL of the learner and the TL norm is, thus, seen as a linguistic system perhaps a dialect (Corder 1971a), a pidgin (Schumann 1974a) or even a natural language (Adjemian 1976) in its own right. (Sections 2.2.2.1.2., 3.1.5.2 and 3.1.5.3.).

#### 2.2.2.1.3. EA Studies

A number of studies over the past decade have used EA as a technique for measuring changes in the transitional competence of SLA. Such studies assume that a change in the frequency of a particular error in the spoken or written language of the learner can indicate a change in the learner's IL; the fewer the errors or the lower the frequency of a particular error, the closer the transitional competence of the learner is to the competence of a native speaker.

These studies of EA including (e.g. Dusková (1969); Buteau (1970); Bhatia (1974); Richards (ed.)(1974b); Taylor (1974) and many others), have contributed significantly to the understanding of SLA development and process. In particular, Richards's (1971, 1974a) work generated new hypotheses as to both the systematicity in development and the common processes put forward to explain development in SLA. He analyzed IL data from learners of different NLs (e.g. Japanese, Chinese, French, Polish and others) in what he called a "non-contrastive approach to EA". Richards identified two types of errors: intralingual and developmental. According to Richards (ibid) the former are "those which reflect the general characteristics of rule learning, such as

faulty generalization" (p. 174), such errors are those originating within the structure of the TL itself. On the other hand, developmental errors:

"illustrate the learner attempting to build up hypotheses about the English language [TL] from his limited experience of it in the classroom or textbook" (Richards 1971:174).

In this sense the developmental errors are in a way similar to Dulay et al's (1982), previously mentioned, type of developmental errors (section 2.2.2.1.1.). However to Dulay et al "most of developmental errors are intralingual" (1982: 145). Richards's suggestion of the causes for this type of errors are: overgeneralization, ignorance of rule restrictions, incomplete application of rules and false concepts hypothesized.

Other types of EA studies are acquisition order studies (Section 2.2.2.2.) and developmental sequence studies, in which researchers look at sequences of the development of grammatical subsystems, identifying common stages, for example, the acquisition of English negatives (Milon, 1974 and Cazden et al. 1975); the acquisition of English interrogatives (Ravem, 1968). The studies of this type are reviewed in Section 2.2.2.3.

#### 2.2.2.1.4. EA Merits and Limitations

It is evident that EA has yielded useful insights into the SLA process that have stimulated important changes in practices. Perhaps its most major contribution is that a great number of learners' errors could not possibly be traced to their NLs. In other words, EA has brought the multiple origins of learners' errors to our attention; that is most of the errors are intralingual rather than interlingual. This can be valuable information for the planning of courses, the construction of teaching materials as well as for teaching methods.

Corder (1967), for example, suggests that a learner's innate strategies should be allowed to dictate teaching methodology and determine the syllabus, thus:

"we may learn to adapt ourselves to his [learner] needs rather than impose upon him our preconception of how he

ought to learn, what he ought to learn and when he ought to learn" (p.13).

This view has been further expressed by other scholars (e.g. Nickel, 1973; Richards and Sampson, 1974 as well as in Corder's 1974 paper ).

The argument is as follows: the modelling of classroom TLs can be improved by using learner languages, since the learner will pick up the language when he/she is ready. If we merge TL and learner language, the developmental factors of the learners with their specific source language background and their specific foreign language, learning mechanisms can be used to achieve more efficient learning by changing traditional teaching objectives. Practically speaking, the basic weakness of this hypothesis lies in the fact that a classroom TL which is based on language learner results could be oversimplified or even creolized (Heuer 1980: 79). Moreover, Krashen (1981: 126) observes that "children progress by understanding language that is a little beyond them" (emphasis mine). Thus, Prabhu's Bangalore/Madras Communicational Teaching Project discourages group work. "This is because of the fear [...] that learner-learner interaction will promote 'pidginization' " (Brumfit 1984a: 237).

Whilst the advent of EA undoubtedly signified a crucial advance in IL studies, the approach, however, has its limitations. Schachter and Celce-Murcia (1977), identified six weaknesses concerning EA. These are as follows: 1) the analysis of errors in isolation produced only partial accounts of learners' ILs (e.g. Andersen's, 1977 study)<sup>9</sup>; 2) the classification of identified

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9. This study of the use of articles by Spanish-speakers learning English, indicates that the subjects produced many errors in using the article a/an and few errors in using the article the, which in isolation were non interesting factors. From a deeper analysis of the data with a close inspection of the correct use of articles, Andersen (ibid) concluded many of the subjects were using the strategy of providing the English equivalent of the article which was required in Spanish in such a context. This resulted in few the errors and many a/an errors. Without careful consideration of both errors and non errors, this strategy, namely transfer, would not have been discovered.

errors was often subjective; 3) comparisons of the absolute frequencies of errors attributable to either negative transfer or developmental processes, under-estimated transfer influence on IL development, because transfer usually operates over longer linguistic domains (e.g. word order); 4) the identification of points of difficulty in the TL was often impressionistic and vague. More than one source of errors was possible, but analysts sometimes chose just one; 5) emphasizing on systematic errors led to ignore avoidance phenomenon; and lastly, 6) the biased nature of sampling procedures, with over presentation of certain ILs, certain types of subjects and certain types of data.

Dulay et al. (1982) discuss, more or less, the same weaknesses, classified in three categories. First, confusion of explanatory/process, (i.e., the interaction of the learner's internal processing mechanisms and the external environment) and descriptive/product, (i.e. learner's verbal performance) aspects of EA. Therefore, Dulay et al. argue for a two-stage analysis: (a) errors should be described either by reference to linguistic domains (e.g. word order, morphology, lexis etc.) or "surface strategy taxonomy" (e.g. omission, addition, misformation or misordering). Only then (b) classification of errors (e.g. overgeneralization, transfer etc.) should be attributed.

Second, the lack of sufficient precision and specificity in the definition of error categories in such a manner as to allow replication or comparative studies to be concluded in a scientific way. Consider, for example, the following definitions of 'intralingual errors', given by Richards (1974a: 174) and LoCoco (1976: 99) respectively:

"Intralingual errors are those which reflect the general characteristics of rule learning, such as faulty overgeneralization, incomplete application of rules and failure to learn conditions under which rules apply";

and "Intralingual errors occur when L1 does not have a rule which L2 has; the learner applies an L2 rule, producing an error".

Clearly, the two definitions are not similar. Intralingual errors



in LoCoco's terms happen only when there is no equivalent rule of the TL in the NL. However, many studies show that intralingual errors occur even when there are similar rules in the learner's NL; (i.e. it is not only the result of lack of transfer either negative or positive (refer to section 2.2.1.2.)).

Third, there is an inappropriate use of simplistic classification to explain learner's errors. Since language learning is an interaction of internal and external factors, explanation of errors must reflect that interaction. Learner's IL seems much too complex to be explained simply by identification of errors. Adequate explanation of learner's language system must account for a number of environmental factors, (e.g. training procedures, communication situation and so forth), as well as a number of internal processing factors (e.g. simplification, overgeneralization, transfer, etc.).

On the basis of the above limitations some researchers (e.g. Schachter and Celce-Murcia: 1977) came close to calling for a return to CA; others (e.g. Schachter, 1974) explicitly advocated a combination of EA and CAH strong version in an attempt to "tap more directly into" learner's transitional competence which is the ultimate object of IL studies.

#### 2.2.2.2. Morpheme Order Acquisition (MOA) Studies

##### 2.2.2.2.1. Introductory Remarks

It is well believed that language acquisition is a gradual process which can take anywhere from several months to several years. During that time, learners acquire the different structures that make up a TL (e.g. complements, negatives, plural markers, tense endings etc.). MOA analysts claim that learners acquire some of these structures almost immediately, for example, word order is learned very early. Other structures such as simple verb tenses and 3rd person singular are acquired later (Dulay et al. 1982).

Studies of acquisition order seek to determine the order in which learners acquire language structure. These studies are inspired

(in addition to other factors) by the fact that teachers have noted that no matter how much they drill or correct certain errors, students keep making them. Dulay et al. (op. cit.) give an example to demonstrate the idea that students do not learn structures in the order in which they are taught. In early stages when teaching English as an SL, it is a 'losing battle' if teachers attempt to get students to add the 3rd person singular to a verb or to use has instead of have. Students, however, may very well use these items correctly in a drill or a memorized dialogue, but they invariably fail to do so in spontaneous conversation.

For the last statement, this could be the artifact of teaching form rather than function. Formal foreign language learning is embedded in a classroom situation and primarily guided by the (voluntary or enforced) intention to learn. It is, thus, set apart from communicative behaviour and within the framework of social interaction approaches the status of role play (Littlewood, 1981). Krashen's dual competence model "Learning vs. Acquisition" (i.e. conscious vs unconscious learning) would neatly explain the situation by asserting that the items produced in a drill or a memorized dialogue are learned, but not acquired, and therefore not produced in automatic conversation (Section 3.2.1.).

Dulay et al. (1982), however, claim that the main reason behind the situation mentioned in the above example is discovered by recent researchers.

"The third person -s and has appear relatively late in the order in which learners naturally acquire English structures. If such structures are presented early in a course, students will have an inordinately difficult time learning them and will not learn them until they have acquired enough of the English rule system " (pp. 200-201).

#### 2.2.2.2.2. L1 MOA Studies

The notion of MOA (it is also called 'difficulty' or 'accuracy' order) has grown out of the Harvard Project (in particular Brown, 1973). Brown's (1973) classical longitudinal study of the acquisition of English as a first language by three children holds a



significant position in MOA studies. He demonstrated that children acquiring English as a first language show a common order of appearance of 14 English grammatical morphemes<sup>10</sup> accurately supplied in obligatory context (SOC). Certain morphemes, e.g. -ing and plural tend to be acquired relatively early, while others, e.g. the third person singular -s in verbs in the present tense or the possessive 's marker, tend to be acquired late. The critical point of acquisition can be set arbitrarily, preferably around 90% of target-like usage.

The absence of direct correspondence between the order found and certain environmental characteristics added particular strength to Brown's findings. Brown found that the structures that were most frequently produced in the children's linguistic environment were not necessarily learned earlier; nor was positive reinforcement (in the behaviourist sense) effective for language acquisition. Brown, therefore suggested that:

"children work out rules for the speech they hear, passing from levels of lesser to greater complexity, simply because the human species is programmed at a certain period in its life to operate in this fashion on linguistic input" (1973: 105-106).

In other words, language acquisition is innate. The notion that children will intake what they 'need' for communication, from the available data is also supported by Brown's statement.

Brown's finding was subsequently corroborated in a cross-sectional study of 24 children by de Villiers and de Villiers (1973). The implication of these studies (Brown's 1973; Jill and Peter de Villiers's, 1973,) is that first language acquisition is guided by a universal cognitive mechanism which must be responsible for the invariance of the morpheme order of acquisition supplied by the children.

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10. Present progressive, in, on, plural, contractible copula, uncontractible copula, past regular, past irregular, 3rd person regular, 3rd person irregular, articles, possessive, contractible auxiliary, and uncontractible auxiliary.

### 2.2.2.2.3. Child and Adult SL MOA Studies

After the first language acquisition order research, questions have arisen. Might there also be a common order of acquisition for certain SL structures? Is there an acquisition order from certain English structures which is characteristic of SL learners? The morpheme order approach, therefore, was widely adopted by SL researchers, seeking to test their major hypothesis of there being a 'built-in syllabus' (Corder 1967) in SLA similar to that in first language acquisition (e.g. Dulay and Burt, 1973, 1974, 1975; Bailey et al., 1974; Hakuta, 1974; Larsen-Freeman, 1975; Rosansky, 1976).

In their cross sectional study, Dulay and Burt (1973) compare 3 groups of Spanish-speaking children, who were learning English as an SL, but had different exposure to the TL, in the production of 8 morphemes<sup>11</sup> of the original 14 ones investigated by Brown (1973). They devised an elicitation instrument, the Bilingual Syntax Measure (BSM), which was later used in various studies. Dulay and Burt used the BSM to elicit the "structured natural conversation" (Burt and Dulay, 1980) in order to measure children's acquisition of English grammatical structures in an SL situation. As Dulay et al. (1982: 203) put it:

"This method consists of a natural conversation between the child and the researcher about concrete things and events, guided by questions designed to elicit a range of target structures".

In spite of the differences among the 3 groups in terms of amount and type of exposure to English, Dulay and Burt (1973) reported that the acquisition obtained by the groups were "strikingly similar" to each other. From this conclusion, the implicit suggestion was that there might be a universal or a natural order of SLA.

Dulay and Burt (1973), also reported another study, in which they investigated 6 syntactic structures which were different in English (TL) and Spanish (NL). The purpose was to determine whether SL errors can be accounted for by what they call "creative construction" or "habit formation". They also used the BSM to

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11. Progressive, contractible cupola, plural (-s), article (the and a), contractible aux., past irregular, 3rd person present (-s) and possessive ('s).

collect natural speech of 145 Spanish-speaking children of 5-8 years old, learning English as an SL. From the analysis Dulay and Burt were able to classify 3 types of learners' errors:

1. Developmental: 85% of the errors were of this type.
2. Interference: only 3% of the errors were the result of interference (negative transfer).
3. Unique: (errors which cannot be classified either as (1) or (2)), 12% of the errors were unique.

Dulay and Burt concluded that their results "support the hypothesis that children learning a second language use the same general processing abilities which children use in learning their mother tongue" (1973: 251).

Using the BSM in their (1974) study, Dulay and Burt compared the acquisition of 11 grammatical morphemes in two groups of children: 60 Spanish-speakers and 55 Chinese speakers. They found a very high correlation ( $\rho$  0.95) between the two groups (of different linguistic background) in the MOA. Their conclusion was that the MOA studies tend to give the impression that the grammatical structures of English are acquired one at a time in a clear, linear order (Fig. 2.1.). This is not true. Thus, in a later paper, Dulay and Burt (1975), themselves, introduced the notion that groups of structures are acquired together rather than one structure at a time (this notion is discussed later).

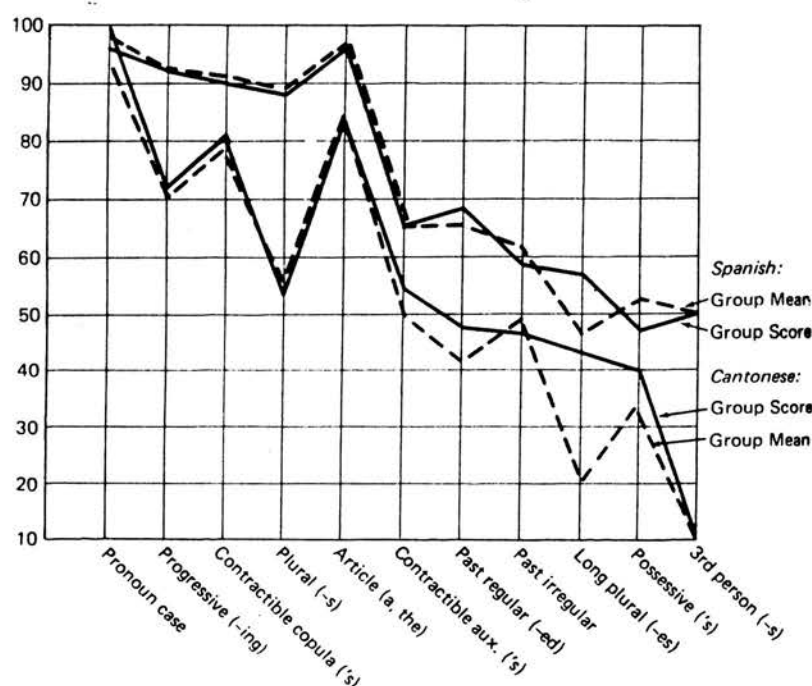


FIGURE 2.1.

Comparison of acquisition sequences for 11 English grammatical morphemes for 3 groups of Spanish-speaking children in Dulay and Burt (1974).

(Source: Dulay et al., 1982: 206).

The findings of the (1973, 1974) studies suggested that there might indeed be a universal or natural order in which SL learners acquire certain syntactic and morphological structures irrespective of their linguistic background. Thus, the idea that SL learners follow the same developmental sequences as first language learners is put forward. This is the L2 = L1 hypothesis, which suggests that SLA, like first language acquisition, is achieved through a creative construction process and this is a process:

"that the second language learner (the child in particular) gradually reconstructs the target language system using cognitive strategies that remain as yet unspecified" (1975: 229).

(L2 = L1 hypothesis is discussed in 2.2.2.3.5.1.). This hypothesis puts forward a universal language learning process. In such a hypothesis the concept of interference or transfer (positive or

negative) plays no role at all in SLA. The theoretical framework of this hypothesis is based on empirical data from various studies by Dulay and Burt (1972, 1973, 1974, 1975, 1977) and it is the framework of their (1972) study, that is used as the basis for their subsequent investigation.

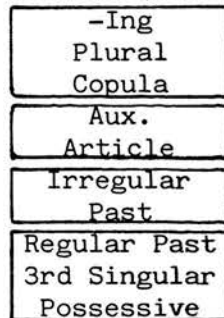
Meanwhile, Dulay and Burt's hypothesis and methodology were applied to several other studies to investigate different ideas regarding the SLA. Ervin-Tripp (1974), for example, used the same hypothesis and methodology to compare the order and process of SLA with that already reported in mother tongue studies. Her subjects were 31 French children between the ages of 4 and 9, who were learning English as an SL. The study showed that "in many respects the development of comprehension of syntax and of morphological features follows the order in the mother tongue studies" (1974: 11). She also found that children of older ages learned syntax much faster than younger children in the range of her sample.

Bailey et al. (1974) in a cross-sectional study extended the research of morpheme acquisition sequence to adults. They investigated the possibility that adults might show an acquisition order similar to that found for children, for the eight structures studied by Dulay and Burt (1973). By using the BSM and other techniques used by Dulay and Burt, they analyzed the production of the grammatical morphemes. Their sample consisted of 73 adults who were divided into two groups: one of native Spanish speakers and one with native speakers of 11 different languages. Bailey et al. found that "there is a highly consistent order of relative difficulty in the use of the functors" (1974: 235), irrespective of 12 different linguistic backgrounds. Then, they carried out comparisons between the sequence for their total sample and the sequence that Dulay and Burt had reported in their (1973, 1974) studies. From the comparisons, they concluded that the acquisition sequence in the children and adults studies are very similar. As Bailey et al. (1974) put it "Children and adults use common strategies and process linguistic data in fundamentally similar ways" (p. 235).

In their article entitled 'A new approach to discover universal strategies of child SLA', Dulay and Burt (1975) introduced a new procedure for data analysis that yielded acquisition hierarchies (ordered groups of structure), rather than one structure at a time. The technique which was originally used by Dulay and Burt, and, before them, Brown, was the rank order. Dulay and Burt, however, pointed out an important problem with this methodology. The scores for the grammatical morphemes tend to cluster together in groups. Simple ranking gives the impression all the scores are equidistant from each other (refer to Figure 2.1.).

The acquisition hierarchies (Figure 2.2.), show that the items in Group (1) are acquired before those items in the groups below it. Items in one group are assumed to be acquired at about the same time and are considered to be unordered with respect to each other. Krashen (1981), taking data from a large number of studies proposed 'a natural order' for the most frequently studied morphemes.

FIGURE 2.2.  
From Krashen (1981: 59)



Burt and Dulay (1980) in a lengthy article which summarizes and attempts to justify the morpheme order studies argue that "acquisition order studies could also provide practical guidance in the development of the curricula, materials and assessment instruments" (p. 266). The implication is that if a universal order is found and if such an order conflicts with pedagogical orders (syllabuses), then, certainly the natural order should be the basis of curricula and materials, since it reflects a psychological reality. Krashen and Terrell (1983) present a "new approach to the teaching of second and foreign languages" (p.1.).

Their approach is called the 'natural approach', which is mainly based on Krashen's (1981) 'natural order' of acquisition hierarchy.

The view that learners acquire certain grammatical morphemes in a predictable order is a finding that has been replicated in other studies. Fathman (1975a, 1975b) studies the relationship between age and SLA as well as the effect of different linguistic backgrounds on SLA. She developed an oral production test, Second Language Oral Production English (SLOPE), in order to assess the ability of non-native English speaking children to produce standard English morphology and syntax. The SLOPE test consists of 20 subtests with three items each. It examines the following structures: affirmative-declarative, article, present participle and possessive.

Fathman's subjects were 140 learners of 6-15 years<sup>12</sup> old, learning English as an SL in a variety of classroom environments in the US. They were from different linguistic backgrounds. In addition to the SLOPE test, each learner was asked to produce a general description of a composite picture, then, they were rated on a 5 point scale for correctness of grammar, pronunciation and general fluency. Fathman divided the subjects into two age groups: (1) younger group (from 6-10), and (2) older group (from 11-15). Then she examined first the relationship between age and the rate of acquisition of the English grammatical structures tested. Second, she examined the relationship between age and the order of acquisition of the tested structures.

As far as the first question was concerned, Fathman found that there was a relationship between age and rate of learning. In her sample, the older children (11-15) performed significantly better on the morphology and syntax subtests than the younger children (6-10). This suggests that the first group learned the structure at a faster rate than the latter group. However, on the second

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12. Thus, qualified as being within ~~Lenneberg~~ Lenneberg's critical period.



test (oral production of a general description of a composite picture) the results revealed that, the younger group received significantly higher rating on pronunciation, although they had been exposed to English for the same period of time. Fathman's suggestion is that the younger children may be learning English phonology at a faster rate than the older children. No significant difference, for the rate of learning between learners who had extra ESL classes and those who had not, was found.

For the second investigation (i.e. the relationship between age and the acquisition order of the tested structures), Fathman's findings showed that there was no significant difference in the acquisition order between the two groups. On the contrary, she found no significant differences in difficulty between the two groups, and also found no major difference in difficulty order between those who had extra ESL classes and those who had not. For those items common on both studies, the order Fathman (1975a, 1975b) reported did not significantly differ from the order found for children learning English as an SL in Dulay and Burt's (1973, 1974) studies. Moreover for the effect of native language on the learning of SL, Fathman found a high correlation ( $\rho = 0.84$ ), in difficulty order for the 20 subtests of the SLOPE, between Spanish and Korean speaking children learning English as an SL.

Krashen et al. (1976), as a further test of the predictions made by Lenneberg's (1967) critical period hypothesis, were interested in examining to what degree children and adults would agree in difficulty order for the SLOPE subtests. Lenneberg's (ibid) hypothesis stated that natural and complete acquisition of language can only take place between age two and puberty and that during puberty changes occur in the brain to the effect that the ability to acquire a language in the same way as before puberty is lost, thus, the process of language acquisition in children and adults will be different.

There are, however, indications that the processes of child and adult SL learning are not entirely different. Bailey et al.

(1974), for example, reported a difficulty order for grammatical morphemes for adult learners of English as an SL that was not significantly different from that found in children learning English as an SL (Dulay and Burt, 1973, 1974). Related to this notion is the question of whether the NL of the learner makes a significant difference in difficulty order. The results of studies like Bailey et al. (1974), Richards, (1971) and others indicate that a large percentage of adult SL errors are common to all adult learners from various linguistic backgrounds.

Using Fathman's (1975) SLOPE test, Krashen et al., (1976) extended Bailey et al.'s., (1974) results to a wider range of grammatical phenomena, since Bailey et al.'s. study was based on eight grammatical structures, whereas Krashen et al. used the SLOPE test which is an oral test of 20 grammatical structures. In this study, the subjects were 66 adults from different linguistic backgrounds (Spanish, Greek, Chinese, Persian, Russian, Korean, Italian and others). Their exposure to English ranged from those with a great deal of formal instruction in ESL to those whose learning was extremely informal.

They carried out comparisons of: (1) different NL speakers; (2) children and adults; and (3) formal and informal learning situations. From their findings, Krashen et al. (op. cit.) concluded that:

"the difficulty order found was not significantly different from that found in children learning English as a second language in previous studies. [....]. These results confirm and extend Bailey, Madden and Krashen's (1974) findings and support the hypothesis that certain similarities exist in the language acquisition processes utilized by children and adults" (p. 145).

Secondly, "no significant difference was found between speakers of different first languages" (p. 145); and thirdly "the difficulty order is virtually the same regardless of learning environment" (p. 150).

A series of studies were reported by researchers who are now involved in the investigation of natural order, using different elicitation techniques. Krashen et al., (1977) examined the spontaneous speech of 33 adults from six different linguistic backgrounds. Again, the sequence was similar for the acquisition of 11 morphemes. Fuller, (1978) adopted Fathman's oral and written SLOPE test to find out the order of acquisition of 20 structures by 80 adults, divided into two groups: Indo-European and Non- Indo-European. Her results showed that: first, the acquisition order was similar for all sixteen linguistic groups; second, for the five structures that had been examined in previous acquisition order studies, the same order was found as in earlier studies using the rank order technique; and finally, for structures already analyzed in Dulay and Burt's (1975) hierarchical analysis study, the ordering relationships were virtually the same.

The next focus of interest was the order elicited by the written mode rather than the oral mode as has been the case in most of the above-mentioned studies. Anderson, (1978) used the written paragraphs of 89 students who had around ten years of formal ELT. The acquisition order was close to those of Dulay and Burt's and had a high correlation with Bailey et al's., (1974) sequences. Krashen et al., (1978) investigated the MOA of 70 adults from four different NLs and found an acquisition of morpheme order similar to those already discussed. Fuller's (op. cit.) study also included the written version of the SLOPE test. The five structures examined were reported to be similar to the oral sequence. Moreover, she found the same ordered groupings for the written mode that she had found for the oral test.

The implication of the results of the previously mentioned studies are as follows: regardless of various variables (e.g. formal/informal learning, different linguistic backgrounds, age, type of elicitation tasks, written/oral mode, different methodology of analysis) learners whether children or adults appear to follow a predetermined sequence of acquisition of grammatical morphemes.

In other words, learners follow a "built-in syllabus" (Corder, 1967) or a "natural order" (Krashen, 1981) which is independent of the way or order linguistic data is presented to them.

#### 2.2.2.2.4. Criticisms Against MOA Studies

The MOA studies was and still is the subject of debate. On the one hand, some researchers argue about the validity of Dulay and Burt's findings supporting their claims with empirical evidence (e.g. Bailey et al., 1974; Fathman, 1975; Krashen et al., 1976 and others mentioned above in Section 2.2.2.2.3.). On the other hand, others criticize the methodology and/or the results, putting forward on their part empirical evidence to support their arguments (e.g. Andersen, 1976, 1977; Cazden et al., 1975; Larsen-Freeman, 1975, 1976; Hakuta, 1974; Porter, 1977; Rosansky, 1976; Wode, 1976; Wode et al., 1977, 1978 and others).

##### 2.2.2.2.4.1. The Acquisition Order as an 'Artifact' of the BSM

Most of the MOA studies used the same elicitation instrument: BSM. Many researchers criticized the results reported in these studies as due to the instrument being used. For instance, Hakuta (1974) carried out a longitudinal study of a 5-year-old Japanese girl (Ugnisu), who was learning English as an SL. He reported low correlation between the order obtained for this subject and Dulay and Burt's (1973, 1974) findings.

Similar kinds of contrast with previous studies were reported by Cancino et al., (1975) in their study of the acquisition of English auxiliaries. Their subjects were five Spanish speakers learning English in a natural way and the data were spontaneous speech production of the learners. The development of the auxiliaries in declarative, negative and interrogative utterances were examined. The analysis showed considerable variability from that found by Dulay and Burt's (op. cit.) studies. Cancino et al.'s, (1975) results indicated that is copula appeared first followed by can and do shortly afterwards and apart from these three auxiliaries, the order of appearance for each subject was highly variable. Thus, they asserted that their findings "contrasted sharply" with

those of Dulay and Burt's studies and Bailey et al.'s , (1974), which reported an invariant order of acquisition, in similar grammatical features, among the subjects.

Larsen-Freeman, (1975) used four data collection procedures in addition to the BSM test in order to examine whether the data collection procedure affected the MOA. The tasks each involved a particular skill: reading, writing, listening, imitating and speaking. Ten<sup>13</sup> of the eleven structures studied by Dulay and Burt, (1974) were investigated in her study. The subjects were 24 adult ESL learners with different linguistic backgrounds (Arabic, Japanese, Persian and Spanish).

The findings of her study showed that, in spite of the individual and language group variability, a high degree of similarity was found among the morpheme sequences produced by various language groups within each task. The implication of this led Larsen-Freeman to agree with Dulay and Burt's (1973, 1974) view that linguistic backgrounds did not have a significant effect on the way SL learners of English order English grammatical morphemes. However, when morpheme orders or a "common difficulty order" - as she prefers to call it - across the different tasks were compared, it was found that the different tasks yielded different orders. Obviously, the BSM elicited an order which was highly correlated with that of Dulay and Burt's (1974). Larsen-Freeman suggested that each specific task may well present its own order and these different orders may be due to modality differences, specific task effects, skill difference etc.

Krashen et al., (1976) disagreeing with Larsen-Freeman's claims, suggested that the reason that other tasks, in her study, did not replicate order of acquisition found by the BSM may be the result that the other tasks allowed more response time and their sugges-

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13. Progressive -ing, progressive auxiliary, short plural, long plural (es), third person singular, regular past, irregular past, possessive (NP's) copula and article (definite 'the' and indefinite 'a') (Larsen-Freeman, 1975: 411).

tion was based on the Monitor hypothesis. The Monitor Model, according to Krashen et al., has an editing function and can be operated by the learner, under specific conditions, to improve the accuracy of each taught rule like the 3rd person singular -s or the regular simple past -ed morphemes, hence disturb the natural order. They argue that conditions which allow for focus on form, delayed response and accuracy oriented tasks, like Larsen-Freeman's discrete point task, plus the learner's knowledge of the rules and the desire to use those rules, are most conducive to monitor use. (Refer to Section 3.2.1. for a discussion of Monitor Model).

Doubts about the use of the BSM had not been based only on SLA data as the above studies revealed; but also, on the first language acquisition data. Porter, (1977) argued that "the previous order of morpheme acquisition obtained through research on L2 research was probably an artifact of the Bilingual Syntax Measure testing situation" (p. 47). He analyzed the speech production of 11 English speaking children aged 2 to 4 years. The speech samples were elicited by the use of BSM. His findings of the morpheme acquisition sequence did not correlate with orders reported in comparable first language acquisition research (e.g. Brown, 1973; de Villiers and de Villiers, 1973), which were based on spontaneous speech production. Moreover, the acquisition order did not correlate with BSM elicited child SLA by Dulay and Burt.

In a review of Porter's paper, Krashen, (1978) pointed out that contrary to Porter's interpretation of his (1977) data, the BSM first language order he found was not 'highly dissimilar' to child first language order obtained by spontaneous speech. Krashen also stated that the degree of Porter's BSM first language order was not inconsistent with that of BSM SL order found in Dulay and Burt's, (1974) study. He drew attention to his dual competence hypothesis (acquisition vs. learning, see Section 3.2.1.) by pointing out that where spontaneous production of learners was unmonitored (i.e. acquired rather than learned), all studies showed agreement with the BSM order as long as at least the



obligatory occasions were included for each morpheme analyzed.

Despite Porter's (1977) and Larsen-Freeman's, (1975) arguments, different studies using other oral elicitation techniques - (e.g. SLOPE test), for both children (e.g. Fathman, 1975; Kessler and Idar, 1977), as well as adults (e.g. Bailey et al., 1974; Krashen, 1981; Krashen et al., 1976) - appeared and these studies confirmed the findings of Dulay and Burt's (1973, 1974) studies. In written tasks, however, performance on grammatical morphemes and their ordering in relation to each other appear to be less consistent. Natural writing tasks, in general, appear to yield similar sequence as those in oral production (e.g. Andersen, 1976). But, the correlations tend to be lower and sometimes there is no significant correlation such as Larsen-Freeman's, (1975) study discussed earlier. Thus, Krashen's, (1978) conclusion is that:

"the BSM morpheme order obtained by several investigators is not an artifact of the test. Instead, as Dulay and Burt, (1973, 1974) have hypothesized, it may be the result of tapping the 'creating construction' process" (p. 190).

#### 2.2.2.2.4.2. Reservations of the Methodological Techniques

Other arguments against the morpheme order studies are raised by Tarone, (1974), Rosansky, (1976), Andersen, (1977) and Wode et al., (1978). These researchers agree that methodological problems concerning data collecting procedures and statistical evaluation made the result of these studies difficult to interpret.

First, Tarone, (1974) raised the question that while the groups in Study 2 <sup>14</sup> (i.e. 1973) correlate highly with one another (in acquisition of 8 morphemes), and the groups in Study 3 (i.e. 1974) correlate significantly with one another (in acquisition of 11 morphemes), the groups in the two studies do not correlate. The acquisition of morphemes by the Spanish-speakers of the second study, when compared with the acquisition of morphemes by the

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14. Dulay and Burt's first study was in 1972.



Chinese speakers in the third study "is not significant at .05 in similarity of sequence", (Tarone, 1974: 61). Consequently, such discrepancies between the two studies led her to raise several questions: (a) which order of morpheme acquisition is the correct one?; (b) why were the results different in the two studies?; (c) was the various orders obtained the result of different tasks?; and finally (d) why was a rank-order measure used rather than a product-moment measure of correlation?<sup>15</sup>

The product-moment measure would be more accurate and it could be used since percentage measures are available. The Spearman rank order formula produces a 'group means' linear correlation and this may tend to obscure some divergencies in the data of the (1974) study. In the same paper, Dulay and Burt commented on Tarone's discussion. Not surprisingly, they defended their studies, however, with 'somehow' subtle answers. Their answer of Tarone's last question is a good example of this:

"A rank order measure was used because it had been used in the de Villier's cross-sectional study. [...]. Further, our statistical consultants [...] did not advise use of the product-moment measure" (Tarone, 1974: 68).

Second, Rosansky, (1976) states that "Recent morpheme studies of SLA are methodologically difficult to interpret and the validity of some conclusions is questionable" (p. 409). By correlating morpheme acquisition order found in Dulay and Burt's studies, with orders she obtained in her cross-sectional as well as her 10 longitudinal studies, she raises several methodological problems.

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15. Rank-order correlations have to do with place in a rank order, and we assume that those ranks are real, even if not strictly equal intervals in nature. For instance, if ranks 2 and 3 are extremely close and ranks 3, 4 and 6 widely spaced, then the ranks and the order itself may be meaningless (Hatch and Farhady, 1982).

Rosansky's study is an attempt to find out whether: (i) the morpheme order obtained is similar to that reported through the use of Dulay and Burt's BSM, and (ii) the cross-sectional and longitudinal research findings in SLA are comparable. Her sample was of 6 Spanish-speakers (2 children, 2 adolescents, and 2 adults) learning English as an SL.

In her attempt to prove that there is little validity in the existence of a morpheme acquisition sequence, Rosansky compared the order of morphemes produced by the 2 adolescents on the BSM-based to spontaneous speech data. No significant correlation was found. More interestingly, when the order of morphemes obtained based on the BSM compared to spontaneous speech, there was no correlation for the same person at the same point in time. Although, significant correlation was found between the two subjects BSM-based order (when correlated with each other), this was not the case for the spontaneous speech orders. She also drew attention to the fact that although Dulay and Burt reported significant correlations within their studies of (1973, 1974), the correlations across the two studies were less clear (which is similar to Tarone's, (1974) view). In particular, the lack of significant correlation between Dulay and Burt's (1973) Sacramento group and the groups in their (1974) study. These findings led her to suggest that "it may be that different methods or different tasks are either not measuring the same thing or are in some way affecting the outcome". (Rosansky 1976: 413). A similar view was also expressed by Larsen-Freeman, (1975).

In addition, Rosansky, (1976) pointed out the issue of presentation or omission of certain results in some studies. This led researchers to rethink about the interpretation of correlation statistics. In Dulay and Burt's (1974) study, for example, sometimes a Pearson correlation was used and sometimes a Spearman rank order correlation, while in their previous studies rank order correlations had been used. The only correlation they produced between their two groups (Spanish-speakers and non-Spanish speakers) was a highly significant Spearman correlation ( $\rho = .926$ ,

$p = .001$ ). Would it not be the case that this was because of the insignificant Pearson correlation between the two groups ( $r = .54$ )? Also, since scores for particular morphemes were clustered together (refer to Figures 2.1. and 2.2.), ranking made the separation appear greater.

Recently, Long and Sato, (1984) asserted that the statistics used in most MOA studies to measure the strength of association between two rank orders of accurate suppliance of a set of forms (i.e. the Spearman rank order correlation coefficient) "is weak" (p. 14). They cited Brown's (1983) argument which showed that quite substantial differences need to exist before statistically non-significant results are obtained. Findings of statistically significant commonalities in rank orders tended to overestimate the extent of actual similarity. Thus, the methodology of the MOA studies needs to be supplemented by other methods of analysis, if we are interested in the whole learning process and not just in the rank order of items.

Rosansky, (1976), also, examined whether cross-sectional rank order of morpheme accuracy correlated with the longitudinal derived order of acquisition. Data from one individual was used and the cross-sectional order compared with the order of morpheme acquisition over 10 months of the study. The results showed that there was no correlation between the two data. The validity of cross-sectional studies, at least in the area of MOA was questionable. Additionally, she commented on the large amount of individual variability in morpheme order in her data. (Larsen-Freeman, (1974) addressed the same point). Rosansky (ibid.) pointed out that in the process of statistical treatment, individual variability may be obscured since scores are averaged, means computed and then ranks assigned. This is, certainly, an important issue even when there seems no convincing data to support it.

Third, Andersen, (1977) criticized extensively the morpheme order methodological techniques and proposed some refinements. He, for

example, (1) demonstrated how much of the systematicity and variability present in the raw data was misrepresented and hidden by using traditional morpheme order approach. This was following Brown, (1973) who marked 90% suppliance in an obligatory context as 'acquired' and the whole range between 0-90% as 'not acquired'. Andersen (ibid.) proposed the Group Range Method as a better scoring method which in addition to establishing an accuracy order for morpheme, tells something about individuals' performance on each morpheme. It gives the percentage of subjects who used each of the morphemes in investigation correctly 90-100% of the time, 80-100% of the time and 70-100% of the time. His argument, (in addition to those of Larsen-Freeman, (1975) and Rosansky, (1976) ) draws attention to the fact that it certainly seems essential to determine to what extent the morpheme order acquisition has reality in the SL production of individuals. After all, cross-sectional study is undertaken in the belief that group performance reflects individual longitudinal order.

Another point that Andersen made is that (2) the 14 or so morphemes which were frequently studied, were not grouped to specific linguistic structures in specific contexts of communication. Finally (3) since the MOA studies did not constitute natural groups or related categories, Andersen proposed testing for individual fit the studying of natural groups of morphemes; (e.g. NP-related or VP-related morphemes), and the use of implicational scaling to obtain a fuller and more representative analysis of cross-sectional SLA.

Fourth, Borland, (1984) discusses an important point which has been continuously commented upon in relation to the interpretation of the results of the MOA studies, namely, the interpretation of correlation statistics. Most researchers in seeking to emphasize the similarity in the MOA of groups of learners, tend to concentrate on whether or not a particular correlation is significant. Guilford and Fruchter, (1978) define a coefficient of correlation as:

"a single number that tells us to what extent two things are related, to what extent variations in the one go with variations in the other. Without the knowledge of how one thing varies with another it would be impossible to make predictions" (p.77).

Moreover, when a correlation has been established it is essential to assess "the degree or closeness of relationship" (Garrett 1960: 175). In other words, a rho of (.7) at  $p = .05$  level is significant; yet a rho of (.85) at the same level of probability ( $p = .05$ ) indicates a much stronger relationship between 2 variables than the former. Accordingly, the higher the correlation for a particular variable of samples (in this case morpheme order), the stronger the relationship is.

From the available literature, it was found that different elicitation instruments designed to elicit non-monitored speech produce orders which were usually, but not always, significantly correlated (e.g. Larsen-Freeman 1975; Rosansky, 1976). However, studies using the BSM correlated more highly with each other than with non-BSM studies (Krashen 1981: 60 for correlation values). Further, although the orders obtained for learners with different linguistic backgrounds, generally correlated significantly with each other, the correlations appeared to be higher between groups of learners with the same NL; (i.e. the relationship between two groups of the same linguistic background was stronger than the relationship between 2 groups of different linguistic backgrounds). This suggests that there may be a relationship between language distance (between the NL and the TL) and the strength of correlation (Krashen et al., 1976; Borland, 1984).

The fifth reservation of the MOA methodological techniques is that, it overestimates learner's level of development. The analysis credited a learner with having mastered a form, to accuracy level observed, if that form appeared where a native speaker would use it in an obligatory context. If a learner, however, used the form in non-obligatory contexts this is not considered as a lack of mastery. To the extent that a learner could score 100% for supplying or overgeneralizing a morpheme like -ing or the in all obligatory and non-obligatory contexts and not

be penalized for the other errors since these occurred in a non-obligatory context, which fell outside the scope of the analysis. Scoring correctly sentences like 'Sitting down like this' used as a command (Wagner-Gough, 1978: 159), led SLA researchers and scholars to reconsider the fact that producing forms in obligatory and non-obligatory contexts does not necessarily entail the acquisition of their TL functions. As a consequence, various types of analysis have emerged, these include Performance Analysis and IL Context Studies which will be discussed in Sections 2.2.2.4. and 2.2.2.5. respectively.

#### 2.2.2.2.4.3. Inadequate to Capture Developmental Regularities

There are other more serious objections to the MOA approach in addition to those discussed in the previous sections (2.2.2.2.4.1. and 2.2.2.2.4.2.). Wode et al.'s, (1978) paper, entitled 'Developmental sequence: an alternative approach to morpheme order' is a severe criticism of the approach of MOA studies. In that paper, they demonstrate that such an approach misses important phenomena to our understanding of SLA processes such as avoidance of particular forms, underlying acquisitional strategies and principles and subtle influences of the NL. They argue that "the morpheme order approach cannot capture numerous acquisitional regularities" because the approach focusses only on 'target-like usage'. "Pre-target-like regularities", however, "must be regarded as an essential part of the total process of acquiring a language". (Wode et al., 1978: 176). As an alternative, they put forward the notion of developmental sequence, a notion that is described as being "richer and more powerful than the morpheme order" (Wode 1981: 65). Wode (1978) also expresses the same view.

Resulting from this sort of thinking, researchers like (Huebner, 1979; Meisel et al., 1981) raised questions about the value of the MOA studies. Huebner's study is a one year longitudinal investigation of the development of the article system, in an adult learning English in a natural setting, without any formal instructions. Attempting to prove that the MOA approach:



"fails to recognise the systematic use of English functors before they acquire Standard English functions and to explicate the interrelationships of the various areas of the interlanguage syntax" (p. 21.),

Huebner, (1979) compared the use of the MOA approach and the dynamic paradigm which is based on Bailey, (1973) and Bickerton, (1975). (See Section 3.3.3.).

Huebner points out that the system of articles in English marks referentiality of NP and this is presented in terms of 2 binary features: (1)  $\begin{smallmatrix} + \\ - \end{smallmatrix}$  specific referent, and (2)  $\begin{smallmatrix} + \\ - \end{smallmatrix}$  assumed hearer's knowledge. On this basis the English NPs are classified into 4 types and a semantic wheel representing the semantic field for NP reference is provided. (Heubner, 1979: 25, for figure of semantic wheel for English NP reference).

The main argument is that, the observations he reached about the systematicity underlying the learner's IL (here the development of English NP reference), could not have been adequately handled by the MOA approach. Over the one year period of his study, the criterion for acquisition as proposed by Brown, (1973) was not met and that the differences over time in the learner's IL performance was so minimal that it was possible to conclude that the learner's IL had fossilized; whereas the learner's system was under continual revision.

To discover the development, if any, in the learner's transitional competence:

"we must look not only at where a given morpheme occurs in obligatory Standard English contexts, but also where it appears in contexts where they would not be allowed in Standard English. To do this, we must define these contexts in terms of possibly universal semantic features, rather than in terms of target language categories" (Huebner, 1979: 23-24).

The latter method of analysis, modelled after work done on variation in pidgins and creoles,

"assumes that language is systematic but dynamic, and that variation is the precursor of change; it also assumes that forms are introduced in one linguistic environment, then spread to other linguistic domains as



the speaker revises his hypotheses about the language" (Huebner, *ibid*: 22).

This method overscores the MOA approach which looks at only those morphemes found in Standard English obligatory contexts and hence can tell us when morphemes are acquired with respect to one another. MOA analysis, however, is not the most insightful approach to the acquisition of how they are acquired. Meisel et al., (1981) assert that an interpretation of acquisition as a linear process does not allow one to find out the different degrees of relevance of the linguistic features corresponding to psychological, social or language-internal factors. Variations within the developmental stages therefore cannot be explained.

It is this kind of thinking that underlies the developmental studies which will be discussed in the following section. However, a point should be made clear: the two approaches (i.e. MOA approach and developmental approach), seem somehow related to each other. Developmental studies (as can be seen later) focus in detail on the process of acquisition within structural areas; while morpheme order studies are more concerned with the order in which different structures are fully mastered. The main difference between the two is that developmental studies attempt to deal with the developmental stages that a learner "passes through on his way toward target-like mastery of a structure or an element of the target language" (Wode et al., 1978: 176); whereas, the morpheme order approach focusses on the relative chronology of target-like usage. An integration of these two approaches of SLA is possible through implicational scaling and the techniques offered to us by variability analysis.

In spite of the various shortcomings, the importance of MOA studies should not be underestimated. Not only do the studies pioneer other research in SLA, e.g. developmental studies, but also they raise many important and interesting theoretical issues in SLA (e.g. natural order, universal mechanisms, L2 = L1 hypothesis and so forth).



### 2.2.2.3. Developmental Studies

#### 2.2.2.3.1. Introductory Remarks

Dulay et al. use the term 'transitional constructions' to refer to "the language forms learners use while they are still learning the grammar of a language" (1982: 121). The term 'developmental sequence' is used by Wode, (1976a) and his colleagues in Germany (e.g. Felix, 1978, 1980 ; Wode et al., 1977; Wode et al., 1978) to refer to the transitional constructions and the orders in which they appear. Meisel et al., (1981) proposes that the term 'developmental stage' be used in a strict technical sense to refer to a structural attainment which is necessary in order for a learner to proceed further in a developmental continuum.

The learner's different realizations of a particular structure (e.g. wh - questions: Ravem, (1968, 1974); Negation: Milon, (1974); Reflexive pronouns: Dulay and Burt, (1977); Article system: Huebner, (1979))<sup>16</sup> are extracted from a body of data and used to define what are generally considered to be sequential stages of development. For instance, a learner who is still learning English might say:

- \* 1. Why read John and Mary English?
- \* 2. Which letter not John send?

(From AL-Buanain 1983: 11 and 12 respectively)

These imperfect questions are considered as an indication of the progress learners have made in their process of learning a new language system.

The implication behind the developmental studies notion is that children and adult learners go through a number of key steps before mastering a structure. In first language acquisition studies, it has been found that child's first combination of words like sentences are not random combinations. Children have a grammatical system even at the earliest stages and they go through stages of grammatical development, changing and adding to their 'rules' as they come closer to attaining the adult grammatical system. Further, when children first begin to acquire vocabulary

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16. All these studies investigated English as an SL.

items, they are making 'selective reductions'<sup>17</sup> of adult sentences, omitting some of the words they hear.

During the earliest stage of learning English interrogatives and negatives as a first or second language, a child might be heard saying:

- \* 3. Why you smiling?
- \* 4. He not little, he big.

(Source: Klima and Bellugi, 1966: 202 and 194 respectively)

Similarities between sentences 1 and 3; and sentences 2 and 4 are apparent by comparison. Analysis of these and other kinds of sentences have made it feasible for researchers to describe in some detail the intermediate stages involved in learning some basic SL structures.

Much of the work in this area of SLA has involved comparisons of the grammatical constructions used by SL learners with those made by young children acquiring their first language. The results had showed "striking similarities between the transitional constructions produced by first and second language learners" (Dulay et al., 1982). Differences, however, were also noted. For instance, SL learners appear to produce a wider variety of forms, in one developmental phase, than do first language learners, (e.g. adults use this and these, while children use only this), which could be an evidence of the fact that adults are more mentally sophisticated than children (refer to Section 2.2.2.6. for Studies of the Effect of Non-Linguistic Variables).

Researchers also found that many of the errors in transitional constructions produced by SL learners bore no relation to their NLs. Hatch, (1978a), for example, concluded her analysis by asserting that there were high degrees of similarities in the SL production of the learners and in their developmental stages,

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17. These 'selective reductions' led researchers and scholars to put forward hypotheses like 'innate grammar' for acquiring L1 (Chomsky, 1959) and speak about 'built-in syllabus' of SL learner's competence (Corder, 1967).

irrespective of their linguistic backgrounds.

The theoretical motivation for SL developmental studies research are: finding syntactic regularities to establish the existence of a system (i.e. IL), finding a developmental sequence to understand how language learning progresses over time, finding universal strategies for language acquisition, and lastly, to find out the extent of L1 influence.

In the following sections, we will briefly survey the relevant literature and will only present the studies which are mostly relevant to this study.

#### 2.2.2.3.2. L1 Developmental Studies

##### 2.2.2.3.2.1. English

Klima and Bellugi, (1966) examined the syntactic regularities in the speech of children. Following the generative transformational approach, they investigated the development of interrogative, negative and auxiliary systems in the production of three children at the earliest stage of learning English as a first language. Klima and Bellugi held that a child's grammatical development proceeds through the acquisition of transformations.

The reported three stages for interrogatives are:-

##### Stage One:

There is very limited structure to the sentence which consists primarily of nouns and verbs without indication of tense and number. The questions without an interrogative word can be thought of as Yes/No questions. The only marker of Yes/No questions is the rising intonation, since there are no auxiliaries and there is no form of subject-verb inversion. As far as the Wh- questions are concerned, the most common questions are some version of: What's that?; Where +NP (go)? and What +NP doing? At this stage, however, children do not produce questions that resemble, for example, What-object questions and they do not understand this construction when they hear it. The following examples are to demonstrate that finding:

- (1) A. What are you doing?  
B. No
- (2) A. What do you want to do with this shoe?  
B. Cromer shoe.

### Stage Two:

There is some development in the superficial structure of the sentences since Stage 1, (for example, pronouns have developed, articles and modifiers are more often present, some inflections: present progressive and plurals occur and the verb phrase may include a prepositional phrase and proverb). By this stage, there are appropriate answers to most questions. The responses reflect that the child understands that the object of the verb or preposition is being questioned. For example:

A. What d'you need?

B. Need some chocolate

(Klima and Bellugi, 1966: 204).

In the wh- questions, as can be noticed from the example, the auxiliaries are missing.

### Stage Three

In Yes/No questions, there is now a class of verbal forms that invert with the subject in certain interrogatives and may take the negative particle with it. One particular verb, do, occurs only in its function as a helping-verb in inverted questions; but seldom in wh- questions. The auxiliary verbs are not inverted with the subject NP in wh- questions. Moreover, there is a considerable development in children's grammar by this stage (e.g. one finds possessive markers, 3rd person singular, present indicative and the regular past tense indicator). There is also a considerable development in complexity.

Klima and Bellugi, in the same paper, reported three stages of the negatives in English. The three stages are presented below:

### Stage One

There are no negatives within the utterances, nor are there auxiliary verbs. The element which signals negation is No or Not, and this element either precedes or follows the rest of the utterance. For example:

No singing song

Not a teddy bear

Touch the snow no

(Klima and Bellugi; 1966: 192, 194).

### Stage Two

Negation has a possible lexical representative: can't, don't, not and occasionally no. The auxiliary verbs can be thought of as occurring in the speech of the children only when accompanied by negative sentences since the auxiliary verbs do not occur in questions or declarative utterances at this stage. In other words, don't and can't are considered as lexical representation of negation since there are no occurrences of sentences like:

I can do it or Can I have it? etc. The negative element no is also found within the sentence, but not connected to an auxiliary verb as in: He no bite you.

### Stage Three

The modal auxiliaries now appear in declarative sentences and questions as well as in negative sentences. Moreover, the negative auxiliary verbs are no longer limited to don't and can't. The auxiliaries, also, appear in declarative sentences as well as questions, thus the auxiliary verbs can be considered as separate from the negative element of the sentence.

The developmental stages of English interrogatives and negatives as found by Klima and Bellugi (1966), are summarized in Table 2.1. However, the beginning and end of the developmental stages of structures are not as abrupt as it appears in the Table. They overlap.

According to the stages of interrogation and negation development, the children move in successive steps in their acquisition of the linguistic structures. Subject-Aux inversion, for example, appears first in Yes/No Qs. and not in the Wh- Qs. Since the latter demand 2 transformations (i.e. Wh - fronting and Subject-Aux inversion), while the former demand only the Subject-Aux inversion transformation. In this respect, Klima and Bellugi's findings could affirm the notion that "the ordering in terms of derivational complexity would predict the order of appearance" (de Villiers and de Villiers, 1978: 109). This means that the derivationally complex forms should appear later in child's speech than simpler forms.

From the data 'rules' were written and these were hypothesized as the representation of the child's internal rules for generating utterances. Although language acquisition is systematic, there are a lot of variabilities in it. Writing grammar, for a 'dynamic system' however, is not only difficult but also not suitable as a developmental descriptive technique. Thus developmental language is possible to be described, but, certainly, not to make strong claims, particularly on the basis of so little data (3 subjects).



TABLE 2.1. Some intermediate steps in the acquisition of interrogatives and negatives for English as a NL

	<u>Interrogatives</u>	<u>Negatives</u>
Stage 1	a. Yes/No Q before Wh-Q b. Virtually no auxiliaries e.g. Who that? Where milk go?	(No)/(Not) before or after utterances  e.g. No wipe finger Wear mitten no.
Stage 2	a. Use of modals (e.g. can, will) b. No inversion e.g. Where me sleep? Why not... me cann't dance?	a. Unanalyzed negative element (can't, don't, not and no)  e.g. I don't sit on Cromer coffee He not little, he big
Stage 3	a. Use of auxiliaries b. Inversion in yes/no questions but not in Wh- Q. c. Do-insertion in some Wh- questions	a. Use of analyzed negative elements. e.g. No it isn't That was not me

(Adapted from Klima and Bellugi, 1966)

Bloom (1970) criticized the purely syntactic interpretation of the data and tried to arrive to a "rich interpretation by taking semantics into account".

Tyack and Ingram, (1976), examined children's production and comprehension of questions with the objective of discovering regularities in questions acquisition. Their data consisted of questions collected from 22 children aged 24 to 47 months. They found a high frequency of Yes/No, What and Where questions by age 2. Why and How questions were rarely asked by children of any age. From the findings, they reported a rough chronological order of acquisition: What, Where, Why, How and When. They also found that the questions of the younger children were often stereotyped and repetitive, whereas those of the older children tended to be more diverse.



In the comprehension study, 100 children, aged 36 to 65 months were tested. The test controlled syntax and vocabulary and specific Wh- questions. It was found that the frequency of correct answers increased with the age of the children. They argued that, when children made mistakes, their answers were not random but appeared to be following certain question-answering strategies.

Cairns and Hsu, (1977) investigated the development of some Wh- questions, namely Who, Why, When and How. Fifty children between the ages of 3 and 5½ years old were asked six types of Wh- questions following video-taped sequences. The researchers stated that "the young child's developing ability to answer Wh- questions correctly depends upon the convergence of a number of independent but related abilities" (p. 477). An example given by them was that a child who replied to the question: Why did the doggie eat the sandwich? (after viewing the event) with Because the girl gave it to him, had demonstrated the ability to operate receptively and expressively with the concept of causality and the ability to retrieve and encode appropriate information from memory. They also argued that various difficulties of different forms of Who questions supported a parallel model of information retrieval and processing during discourse. The differential difficulty of Why and When questions were attributable to necessary progression in the ability to encode the relevant concepts linguistically. As for How, responses to that type of question were difficult because they involved a number of unrelated skills. They reported that the acquisition of the four types of Wh- questions was as follows: Who questions were the easiest followed by Why then When and finally How, being the least favoured type in this study.

Other studies that examined the English negatives and/or interrogatives are Brown, (1968), Bloom, (1970) as well as Wode, (1976b), who outlined an alternative proposal to cover four very early stages from the acquisition of negation system in natural languages. The stages are:

1. One word negation, e.g. No.
2. Anaphoric negation, e.g. no outside (no I want to go outside).

3. Non-anaphoric negation, e.g. no close (I can't close the box).
4. Intra-sentential negation, e.g. Kathryn not quite through. (Wode 1976b: 98).

Wode claimed that his proposal "emphasizes the formal linguistic devices as the major variables that determine the various language-specific developmental sequences" (1976b: 87). To support his claim he and the research group at Kiel University examined various first language acquisition studies with different linguistic backgrounds; e.g. Arabic, Bulgarian, Dutch, English, Italian, Japanese and others, (Wode *ibid*: 99). However, he, justly, concluded that his study was "far from complete" and no strong bases "along universalist lines could be claimed." (100).

#### 2.2.2.3.2.2. Arabic

##### 2.2.2.3.2.2.1. Acquisition of CEA as a NL

Omar, (1973) carried out a field research, in an Egyptian village, to investigate children's acquisition of Colloquial Egyptian Arabic (CEA) as a NL. Thirty-seven children were included in the study, ranging in age from 6 months to 15 years. The study is in some way a sociolinguistic type of study. It investigates and discusses the basic characteristics of the physical and social environment of the subjects and the development of early functional communication and speech besides the investigations of the acquisition of the phonology, syntax and morphology of CEA. She administered different types of tests to all children in the study who were able to comprehend their purposes:

- a) The negation test which consisted of 11 affirmative sentences of various types and each child was asked to repeat in negated form. For example, Investigator to the child: "If I say, 'The girl is playing' and you know she isn't, you will say 'No ... What?'. Obviously, children required two or three examples before understanding the directions well enough to proceed with the test.
- b) The interrogation test which consisted of six declarative sentences of various structural types; e.g. the child was told "Ask the girl what she wants to eat".

The goal of the study was to determine the rate and order of children's language development. Therefore, stages of linguistic

development were described, from the babbling stage through mastery of the adult system. Aspects of language development studied included characteristics of the physical and social environment, development of early speech and communication, development of the phonological system, development of the negative and interrogative transformation, and development of morphological inflections for nouns, adjectives and verbs.

Omar found that, in early stages (23-27 months) children omitted some words, most of them 'function words' and non-reference words (e.g. definite articles, optional nouns, prepositions, future and progressive markers of the verb etc.). Many inflections were also omitted. In later stages, she reported that omissions were minor ones. Children produced longer sentences.

Three stages were reported for the acquisition of CEA interrogation:

#### Stage One

The earliest form of interrogation is the declarative sentence spoken with rising intonations, which is probably a stage acquired by children of age 2 or before, during the one-word stage. The Yes/No interrogative sentences develop in length and complexity corresponding to the development of the declarative sentences.

For example:-

/tiddini di/ '(Will you) give me this?'  
 /taXdi di/ '(Do you want to) take this?'  
 (Omar 1973: 133)

#### Stage Two

Interrogatives with question particles are acquired slightly later than Yes/No type of interrogation; but also relatively early. One of the first question particle learned is /?eh/ (what), which is used to ask names of objects, usually in sentences like /?eh da/ (What is this/that). There is also the question particle /min/ (Who) which the child learns when being asked to identify persons. At the beginning, question particles are not used with prepositions. They may be used alone. Some examples are given below:

/min da?/ (Who (is) that?)  
 /le mafiš?/ (Why isn't there any?)  
 /fen il ku:ra?/ (Where is the ball?)

Some children tended to put the question particles at the end of the sentence, (e.g.):

/takli ?eh?/ (What (do you want to eat?))  
(do you eat? )  
(Omar op. cit.: 134).

While other informants produced questions with the word particle in medial position:

e.g. /šuftu min fissuq/  
saw you who in the market  
(Whom did you see in the market?)  
(p. 129).

### Stage Three

In this stage (about 5 years old), children learn the stylistic placement of the words in various positions in the sentence and use them with prepositions. Omar, (1973) described this stage as "mastery of the adult usage of the question word types of interrogation" (p. 135).

Examples of this stage are:

/da li ʔeh/ (lit. for what) (What is this for?)  
 /ʔil kitaeb limin/ (Who is the book for?)  
 /dol bikaem/ (How much do these cost?)  
 /le hiya miš 'am tsa'dak fišsuql/  
 (Why isn't she helping you in the work?)

In the same paper, Omar reported three stages for negation as acquired by children in her study.

## Stage One

The earliest and simplest form of negation heard from children was the free form /la? / (no). Children seem to comprehend this form first, it is used to warn the child against doing something forbidden, like 'no' in English. Examples of this stage are given below:

Investigator /?il bit di darabitik/  
(Did) this girl hit you?  
Child /hiya la?/ (She no)  
Omar (ibid: 125.).

## Stage Two

In this stage, children use other type of negation /miš/ (not). It is, however, not clear if this pattern of negation actually develops after the pattern postulated as Stage One. This pattern continues to be used at later ages even in place of the

other negation pattern, while the /la?/ form is dropped. Examples of this pattern are:

/miš huwa/ (not him)  
 /miš yalla/ (not let's go)  
 (p. 126)

Another finding in this stage is that the negation data show many instances in which children used the /miš/ form of negation when /ma ..... š/ (an affix added to the verb) should have been used<sup>18</sup> (i.e. overgeneralization). For example:

\*huwa miš raḥ/ instead of /huwa ma-raḥš/  
 (He did not go)  
 /\*huwa miš ka:lu/ instead of /huwa ma-ka:luš/  
 (He did not eat it)  
 (Omar ibid: 126).

Unfortunately, Omar's classification and description of rules for negation in CEA adult language (pp. 117-120) miss the most important distinction between /ma...š/ and /miš/. Thus a non-native speaker of Arabic, who closely follows her definition will not be able to recognize why the above-mentioned sentences are incorrect. Quite simply, they are verbal sentences therefore, it is more normal to negate them by /ma...š/ rather than /miš/, since the former is usually used to negate nominal and verbal sentences, while the latter is used to negate equational sentences (see footnote 18).

### Stage Three

Omar (1973), considers the acquisition of the /ma...š/ form of negation as the third stage in negation acquisition, because smaller children were not heard using this form correctly. This type of negation involves the complexity of affixing both a

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18. In CEA, the free allomorph (of the morpheme (m...š)) ) /miš/ is usually used in equational sentences in pre-predicate position without restriction as to type of predicate, it is also used in nominal and verbal sentences Only (i) in pre-verbal position, when the verb is prefixed with /ha-/ (future marker); or / 'am / (progressive marker); and (ii) pre-modal position in verb phrases. Whereas the bound allomorph /ma...š/ is generally used in nominal and verbal sentences, usually to negate verbs in past tense. It is, however, used in equational sentences only to negate (a) the predicate, where the predicate is a prepositional phrase + object or a participle; (b) the subject, where the subject is a personal or indefinite pronoun.

prefix and suffix to the negated word, and the word may undergo complex morphophonemic changes, such as a change in vowel length or shift in major stress. The /ma...š/ form of negation was never substituted for the simpler /miš/ pattern, in this study.

She also argues that since the negated stative verb /mafiš/ (there isn't/aren't), is used by even the youngest children in the two-word stage before it is contrasted with the affirmative /fi/ (there is/are), the item is first learned as a unit which is similar to the analyzed (don't) in English. The word /fi/ was the only item in the negation test requiring /ma...š/ which was negated correctly by all children who took the test.

The developmental sequences of CEA interrogatives and negatives as reported by Omar, (1973) are summarized in Table 2.2. below.

Table 2.2. Some Intermediate Steps in the Acquisition of Interrogatives and Negatives for CEA as a NL

Stages	Interrogative	Negative
One	Yes/No Qs. marked with rising intonation	/la?/ (no) after utterances
e.g.	/taxdi di/	/hiya la? /
Two	Yes/No Qs. Wh-Q. particles in variable position: beginning, medial and end of sentences	/miš/ (not) before utterances /ma...š/ (not) (-correct) + Overgeneralization of /miš/
e.g.	/min da?/	/miš huwa/ /*huwa miš raḥ/
Three	Mastering of Wh-Qs. Correct placement of Positive and negative Wh-Qs.	/ma...š/ is used correctly /miš/ is no longer overgeneralized.
e.g.	/dol bikam/ /bikam dol/	

(Adapted from Omar: 1973)

Omar's treatment of interrogation and negation acquisition leaves many questions unanswered. Her findings are challengeable since they are mainly deduced from the tests she devised. She herself states that "it was difficult to assess the children's competence in forming interrogatives, since interrogatives could not be elicited without giving the sentence structure as a model in the cue statement" (Omar 1973: 103).



However, in spite of the shortcomings of the study, especially in negation and interrogation acquisition, its importance lies in that it is the first attempt to study the acquisition of colloquial Arabic as a first language. Also, in its scope, it investigates the acquisition of the phonology, certain morphological and syntactical structures of a Semitic language at a time when most of the studies in the field of language acquisition are being done on Indo-European languages. The study lays the ground for further studies in the area of Arabic acquisition.

#### 2.2.2.3.2.2.2. Acquisition of Jordanian Arabic as a NL

Samdi, (1979) investigated the acquisition of Jordanian Arabic interrogation and negation by a 3-year-old native speaker of Jordanian Arabic. The subject's spontaneous speech in 30 minute speech sessions were recorded. These speech sessions involved questions and answers, dialogues and games.

Samdi postulated the following stages of the acquisition of interrogation in Jordanian Arabic:

##### Stage One

The earliest form of interrogative which occurs in the subject's speech is the declarative sentences with a rising intonation.

This form could be universal since "declarative sentences are generally considered to be somehow more basic or fundamental than questions" (Brody 1984: 713). Exception, however is found in languages which do not make use of declarative sentences as a tool for questioning e.g. Finnish.

The wh- type is the 2nd category of interrogatives. They are simpler to use than in English in that they do not demand any inversion. /šu:/ (what) and /ʔen/or/wen/ are the first two question words to emerge in the subject's speech (Samdi 1979: 84).

##### Stage Two

A gradual development in the rules seems to occur at this stage. The same form of questioning, that is Yes/No questions and wh-questions with /šu/ and /ʔeš/ (what); /wen/ (where) is continued as in Stage 1. This stage is marked by the emergency and invariable use /min/ (who) with VP's and NP's. Also the overgeneralization of /min/ for both /min/ and /limin/ (for whom). Although the subject understands and answers questions



with how many/much; why and from where, she cannot produce them.

Other question words which have not yet occurred in the subject's speech, might be a part of the stage 3 of interrogation acquisition which Samdi's data do not cover.

Samdi also reported three stages for negation acquisition in Jordanian Arabic.

### Stage One

Samdi's subject produced one word negation :/la:/ (no) in age 19.5, but probably it was produced in her speech before the taping began.

### Stage Two

This stage is further divided into 2 sub-stages.

2.1.A The bound morpheme /ma...š/ (not) is not fully mastered before age 26.16. What characterizes its use at this stage is the occurrence of / š-/ alone suffixed to the word to be negated. The prefix /ma-/ is never used before.

2.1.B Non-anaphoric negation is used once only all through the data age 2.10.

2.1C Repeating the negativity, but not the same form of negative, is a linguistic device the subject starts to use as a way of stressing her denial or refusal of what the adult suggests, requests or asks. This type of negation is formed by /la: / plus the bound morpheme negation or /mu/ negation.

2.2.A /mu/ as a negative particle is used for the first time in age 24.3 It occurs in a sentence initial position only at this stage. (/mu/ can be used initially or medially depending on the speaker's intention. It may negate the whole utterance if used initially or may negate a constituent in an utterance if used medially).

2.2.B The negated imperative occurs for the first time in Iqbal's speech in age 25.28, but without the correct imperfective marker/-ti/. The subject seems to have acquired a simple rule to negate the imperative: she simply adds /la:/ initially to the imperative sentence which is kept as it is without the morphophonemic changes required in order to produce the correct negated imperative.

### Stage Three

This stage is marked by the acquisition of the correct form of

the negative bound morpheme /ma...š/, the occurrence of anaphoric negation, the appearance of /mu/ in a sentence - medial position besides its occurrence in a sentence - initial position, the correct use of the negated imperative forms and the occurrence of /miš/ instead of /mu/ in the /mu/- negative utterances.

#### 2.2.2.3.3. English Second Language Developmental Studies

In SLA research developmental studies have often been initiated as error analysis, searching for evidence of first language influence. Such studies have provided the foundation for investigating the process of SLA. Therefore we find Zobl, (1982) (among others) stating that "Adult structures of the L2 are acquired by progressing through a sequence of developmental structures".

The structure types studied so far include, for example, negation, interrogation (Yes/No questions, Wh- questions, embedded questions), relative clauses etc. The learners' first languages include among others, Arabic, French, Norwegian, Spanish and Russian. In addition to English, SL developmental stages in German and French have been investigated.

The studies which will be presented below are those which investigate the English interrogatives and negatives as acquired by SL learners.

##### 2.2.2.3.3.1. Interrogatives

In SLA literature, Ravem, (1968, 1974) studied the acquisition of English by his two Norwegian children. The purpose of his papers was to present some of the findings concerning the development of Wh- questions in his two subjects, and relate them to those of similar studies of first language acquisition. He found fronting without inversion in Wh- questions, hence reflecting Brown's (1968) results. Hatch, (1978a) examining the data of fifteen studies of 40 SL learners found: Wh- questions began with wh-fronting without inversion (frequently before the copula has developed); modal inversion: can was prior to inversion with other auxiliaries and be inversion occurs before do inversion.

Wode's (1978) paper focussed on the developmental sequence of

interrogative system as observed with his four children, who were acquiring English 'naturalistically'. He found developmental sequences in the acquisition of interrogatives. The stages were overlapped. Wode also reported child-individual variations within developmental sequences. When learners move or have moved from one stage into the next, they do not suddenly stop to produce utterances of the type characteristic of the former stage. In addition, he found overlapping according to tasks. Wode argued that "this kind of overlap correlates with specific situations implies that it is not simply free variation." (Wode, 1978:40).

Al-Buanain, (1983) investigated amongst others the process of acquisition of positive and negative wh- questions formation, namely those beginning with Which, Why and Who. Her data were 28 Arab students, learning English as an SL in different institutions in Edinburgh. Her findings, in broad outline, were similar to those of Cazden et al., (1975). Al- Buanain's conclusion is that "this study seems to support the notion of stages in IL, stages which are not clearly separate from each other, but overlapping". Table 2.3. below displays the findings of her study.

#### 2.2.2.3.3.2. Negatives

Researchers have observed the SL learners commonly pass through systematic and ordered stages in the acquisition of English negation. The acquisition of sentence negation has been described for English first language acquisition by Klima and Bellugi, (1966). Milon, (1974) compared the development of the negation system in English in his subject (a Japanese immigrant of 7 years of age), with the system of negation as it developed in Klima and Bellugi's 3 subjects. His hypothesis was that:

"there will be demonstrable similarities between the characteristics of L1 and L2 acquisition because there are universal heuristics used by young children in acquiring language" (p. 137).

He found that his subject's developmental stages were similar to that described by Klima and Bellugi for first language learners. Thus, he concluded that his subject made use of what was assumed

to be universal sets of language learning heuristic to acquire English in a manner closely analogous to that in which he would have acquired it as a native speaker(i.e. L2=L1 hypothesis).

Cancino et al. (1978) described the acquisition of the negative and interrogative transformations in the speech of 5 native speakers of Spanish. The acquisition of the negative transformation revealed the following pattern: the learners began negating by using no + verb constructions. Then, they used don't + verb construction. In a later stage, they produced constructions in which the negative particle was placed after the auxiliaries; is and can. Finally, they acquired the analyzed forms of don't (i.e., do not, does not, doesn't etc.).

There are, however, some problems in sentence negation studies. As Schumann, (1978a: 18) points out, one cannot be certain whether the subject understudy models his speech on standard English or on another societal dialect. Also, researchers differ in definition of 'stages'. For Schumann "a stage would be defined by the type structure that is more frequent during that time"; but this definition does not hold for others.

Table 2.3. below displays the intermediate steps in the application of Wh-questions and negative Wh-questions found in Al-Buanain, (1983: 18 and 23).

Stages	Wh- Questions	Negative Wh- Questions
Preliminary Stage		Avoiding the use of negative
One	a. Uninverted without inserting auxiliaries b. Insertion without inversion c. Start insertion and inversion d. Insertion and inversion	Non Inversion a. The use of 'not' b. Unanalyzed 'aux + not' - correct form - inversion c. Analyzed 'don't' + correct form + inversion
Two	a. Start not inserting auxiliaries for 'Who' questions b. Not inserting and inverting for 'Who' questions	Inversion of 'didn't' and subject + Correct Form + Inversion

#### 2.2.2.3.4. Arabic Second Language Studies

In recent years, numerous studies have appeared dealing with error analysis in SLA. There is, however, little work done dealing wholly or partly with the analysis of errors made by students of Arabic as a foreign language. The only papers<sup>19</sup> that I am aware of devoted to this subject are reviewed below:

1. Al-Ani, (1971) which, according to the author himself, offers only very limited information restricted to errors committed by two small groups of students who took his 'Advanced Arabic Composition' course. The author's main interest was to capture features of interference in his student's writing. The student's errors were classified as follows:
  - a. orthographic and phonological;
  - b. diction and dictionary usage;
  - c. grammatical (mainly the usage of definiteness, agreement and prepositions).

Al-Ani's conclusion was that "It was not always easy to categorize an error and to find its source or sources.

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19. It should be noted, however, that these studies do not report stages of development.

Features of interference, overgeneralization, analogy and errors of performance are only partial answers to this complicated subject" (p. 7).

2. Rammuny's (1976) study, identified characteristic written errors made by American students who were in the middle and advanced stages of their Arabic study. The subjects were representative of various Arabic programmes in the United States (26 universities). The student's errors were classified into four major categories: (a) orthographic and phonological; (b) lexical; (c) structural; and (d) stylistic. The possible reasons for making these errors were then discussed in relation to some teaching and learning strategies, such as language transfer, overgeneralization, as well as other psychological factors mainly fatigue, carelessness and anxiety.
3. Sami Hana's (1972) "Quantitative Measurement of Errors and Remedial Instructions in Reading Arabic" was based on the reading performance of twelve students who were enrolled in Hana's beginning Arabic Course.
4. Three other papers are devoted to the teaching of Arabic as an SL in foreign environments. Mitchell's (1969) article surveys the language situation of Arabic in Britain. The author gives reasons for the importance of learning Arabic as well as problems that students of Arabic encounter.

Al-Hadidi (1966: 89) criticizes the traditional method used in teaching Arabic as an SL. The emphasis in such a method is on discrete items, translation, old literature, which are difficult even for a native speaker of the language. Recently, however, some institutions I visited, teach Arabic as a living language. Yet, to be more realistic, many establishments teach Arabic as a dead language. One of the learners I met, gave up learning Arabic (he was a 1st year student subject No. 53) because he wanted "to speak the language and not just know about it".

Hana and Greis, (1971) in their paper entitled "The Teaching of Arabic in the USA", discuss problems of teaching Arabic. The teaching of Arabic, however, is not the main subject of this study, the two papers are mentioned because of the close relations between teaching and learning. Moreover, some of the problems encounter students of Arabic will be implied in our analysis and discussion of the results (Chapters 6 and 7).

#### 2.2.2.3.5. Views Related to the Developmental Studies

Some of the issues discussed below have been mentioned earlier.

##### 2.2.2.3.5.1. Does L2 Sequence = L1 Sequence?

This hypothesis was first claimed by Dulay and Burt, (1973, 1974) for the MOA studies. In a discussion of their studies, Dulay and Burt (1974) state that:

"Our L2 = L1 hypothesis was very specific and narrow in scope [...] it encompassed only syntactic error types not the entire process of language acquisition".  
(Tarone, 1974: 59)

However, several reports (e.g. Milon, 1974) on the SLA of English have suggested that the same developmental sequence holds for the acquisition of structures like interrogatives or negatives, irrespective whether English is acquired as a first language or SL. These studies have been conducted within the Klima and Bellugi's, (1966) framework.

Wode, (1976a) rejects the L2 sequence = L1 sequence hypothesis and argues that different sequences for SL development can be expected as a result of the SL learner's use of prior L1 knowledge, which is similar to Corder's 'IL background' (see Section 2.2.2.1.2.). Wode also raises the controversial point: since some reliance on the L1 is an integral part of SLA, there can be no universal order on the English morpheme acquisition; i.e. L2 sequence  $\neq$  L1 sequence. A similar argument is in Wode, (1978; 1983)

Other variables likely to account for different L1 - L2 sequences can be cited. The most basic are cognitive differences as a



sequence of age differences. With young children, first language and SL learning may often be viewed as parallel learning of systems; as if children are learning two dialects (Leopold, 1953). Learning strategies arising from different cognitive styles need to be considered as well as motivation and personality variables. The effect of different learning contexts is also crucial (refer to Sections 2.2.2.5.1., 2.2.2.5.2. and 2.2.2.6.).

It seems to me that L2 = L1 hypothesis is a very strong claim. First and second languages could be related, but certainly they are not the same. For instance, Ravem, (1968; 1974) has reported some SL English interrogative utterances that have so far not been found for L1 English. In other languages, Felix, (1978) has pointed out some differences between L1 vs. L2 German. Part of the problem, however, arises from the instability of the data. Learners tend to fluctuate, (Corder, 1973b). Also, criteria for acquisition remain problematic, (Richards and Kennedy 1977). When is a variable 'known'? Is usage in 60% of obligatory occurrences critical? Furthermore, what about different learning and situational contexts? For example, Sampson, (1971) found that different kinds of phonological replacement occurred with Cantonese learners of English according to whether the setting was a free speech situation or a classroom setting. Variability within IL is not limited to the phonological level, but also to the syntactic level (Section 3.3.).

A lot of studies, (for example, Dulay and Burt, 1972, 1973, 1974; Krashen, 1977, 1981; Wode, 1981, 1984 and others) indicate that learners do not proceed in totally different and wholly unrelated ways. Rather, they seem to learn languages in much the same way. However, the way is not identical and this is very obvious from these studies which report 'striking similarities' between the subjects' IL, yet not identical ones. The fact that the order of morpheme acquisition first and second languages is not the same, is not considered to negate that acquisition of first and second language is related. Corder, (1967: 165) suggests although the process may be basically the same, such differences could exist.

Hence, Tarone, (1974) concludes that the claim that first and second language acquisition order are the same can be supported in only the most general terms given the present inadequate data base. The hypothesis formula could be rewritten as  $L2 \cong L1$ , rather than  $L2 = L1$ .

#### 2.2.2.3.5.2. Variability within Developmental Sequences

As indicated in the previous section the type of transitional constructions observed the same order for almost all subjects. This implies that the learner's IL develops systematically. Variability, however, has been shown in many different studies (e.g. Larsen-Freeman, 1975; Rosansky, 1976, and others), for learner's IL in general and for the developmental sequences in particular. (Variability is discussed in Section 3.1.5.3; 3.3.).

#### 2.2.2.3.5.3. Developmental Sequences Overlap

Developmental studies have given and continue to give us valuable insights into the SLA process. Nevertheless, it is difficult, as a result of their relatively small scale in terms of the number of subjects, to make strong claims of generality for the notion of stages in terms of development of language over time especially with respect to its rate, the nature of the learning patterning, if any, and of variability apparent as the developmental sequence is moved through. Indeed, the classical presentation of stages of development as discrete steps with no overlap is an idealization of the real data. Such an idealization is absolutely misleading. The developmental stages are not separate but often overlap. Since IL is a dynamic continuum, (Corder, 1976, 1977b), we cannot isolate developmental stages; and there are times when the learner seems to regress to an earlier stage or to skip a stage.

#### 2.2.2.3.5.4. L1 Effect on Developmental Sequences

Zobl, (1982) relates the substance of the CAH to a small sample of developmental continua and identifies two L1 specific effects on these. (1) Differences in the rate of development; and (2) differences in the initial developmental structure learners arrive at.

For the first effect, he argues that, despite overall similarities among learners of different linguistic backgrounds, there seem to be little doubts that learners whose L1 marks, for example, definiteness and indefiniteness with a system of articles, achieve a measure of target-like control of the SL article system more rapidly than learners whose L1 does not possess a corresponding formal category, and marks the distinction through some other systematic means like word order, (e.g. Chinese and Russian). Such findings hold for English as an SL reported by Hakuta, (1974, 1976); Fathman, (1975); Mace-Matluck, (1977); and Sajavaara, (1978). This type of interlingual relationship is commonly referred to as Zero Contrast (i.e. the SL possesses a category that is absent in the learner's NL), which is opposite to Categorical Congruence, (i.e. both languages have comparable categories).

A similar more rapid pace of target like control appears to take place with the copula verb, when the L1 possesses this category. Studies like (Scott and Tucker, 1974) dealing with speakers of Arabic, which uses copula for the past tense only or to emphasize the meaning of a sentence, point to a delay in the emergence of copula forms. In a study comparing Portuguese and Arab immigrants learning French as a foreign language, Morsley and Vasseur, (1976) report that Arabic speakers were slower to acquire reflexive pronouns (Cited by Zobl, *ibid*). Once again, Arabic does not possess a separate category of reflexive pronouns and Portuguese does. Zobl explains this phenomenon:

"The delay in achieving target-like control due to zero contrast involves two distinct developmental phenomena. Regardless of language background, learners pass through an initial period during which grammatical morphology (e.g. inflections, articles) is not presented in their utterances. When the L1 possesses a corresponding category [...] this period is shortened. After this initial period there follows a stage in which these elements occur variably, with fluctuations, until their use becomes categorical. In cases of zero contrast, the period of variable occurrence appears to be lengthened as well" (Zobl 1982: 172).

As for the second effect of L1 on the developmental sequences, Zobl argues that it amounts to an alteration of the developmental

sequences, in terms of the number of developmental structures, a learner has to follow. He cites studies of the acquisition of the definite article as a formal category by speakers whose NL has a corresponding category and by speakers for whom this category represents a case of zero contrast, in an attempt to demonstrate that for the latter group, zero contrast may require the "interpolation of an additional developmental structure to bridge the gap between zero representation and the adult article form" (Zobl, *ibid.*: 174). Among other studies, Zobl reports Huang's (1971) study on the acquisition of English by a 5-year-old Chinese-speaking boy. The child's developmentally first means in definitizing a NP is the use of a demonstrative pronoun, mostly this. He compares findings in Huang's, (1971) study with those of Herrandez-Chavez's, (1977). In the latter, the subject is a 3-year-old, whose NL (Spanish) marks definiteness with the article category. The two subjects, claimed by Zobl, are comparable in terms of age and acquisition of context. The comparison yields that with the Spanish child, the demonstrative determiner is not developmentally prior to the definite article. Moreover, one can notice that as early as Month 3, the definite article can substitute for a modelled demonstrative form (e.g. Hey hey this, here the toy). Zobl's conclusion is that, the comparison between the children learning English, whose NL differs as to the possession of the definite article category:

"supports the hypothesis that the systematic use of a deictic determiner as an initial approximation of the definite article is traceable to its non-existence in the learner's L1" (1982: 177).

Zobl's view is reflected in one of the earliest EA conducted by Dušková, (1969). She investigated the errors in the English output of 50 Czech post-graduate students. Amongst other findings, Dušková reported that where a foreign language feature is absent in the NL there may be problems as evident with the subjects problems with the articles.

Corder's (1978a) article investigates the creative constructive process in relationship to language contrast. He grants that

structural similarity "may make passage along the built-in syllabus faster" (p. 30). However, where the NL is different, Corder is of the opinion that this will have no effect on the acquisition sequence:

"In such a case the learner is left with his own unaided cognitive learning capacities to discover those aspects of the L2 which are not similar to his L1" (p. 30-31).

This is consistent with Zobl's first effect of NL on developmental sequences, but not with the second.

It seems, however, that Zobl's point of the second effect of L1 on SLA, namely differences in the initial developmental structures learners arrive at, is an important issue and is not necessarily invalidated by the lack of data to support it. In fact, the examination of the variation introduced by the NL may very well serve as a point of departure for some (very likely premature) inferences about the nature of the interaction between the creative construction process and prior NL knowledge. In addition, by building on developmental studies employing more sophisticated analytical techniques and larger samples, further understanding and insights can be gained about developmental sequences both within and between structural areas.

#### 2.2.2.4. Performance Analysis (PA) Studies

The PA studies dominated North American research in the seventies. They were initially represented as the MOA studies (Section 2.2.2.2.). This type of analysis has been put forward to overcome problems associated with MOA studies mentioned earlier (Section 2.2.2.2.4.). One attempt to improve upon the MOA methodology is now known as "target-like use" analysis (Long and Sato, 1984: 15). The structured formula used for calculating percentage suppliance in obligatory context disregarded the non-obligatory contexts with inappropriate suppliance. The percentage of the TLU is calculated on both numbers of the correct suppliance in obligatory contexts as well as the incorrect suppliance in non-obligatory contexts. Thus, this measure of TLU seems to give a more accurate estimate of learner's ability.

#### 2.2.2.5. IL Context Studies

The emphasis on form rather than function in some studies, (e.g. MOA) omitted from consideration: (1) the possible functional variation of a form; and (2) all occasions where other forms of learner's IL may have covered the same functional/semantic scope as the forms actually analyzed, (Long and Sato, 1984: 22). These limitations are addressed by two alternative ways of analysis: (a) to start from form moving to function (form to function analysis); or (2) to start with function and then move to form (function to form analysis). Such ways of analysis are investigated in context rather than in isolation. Analyzing linguistic and conversational contexts of IL performance, includes both contexts SL speakers create for themselves, and the contexts created for them by their interlocutors. Studies of IL in context also investigate the way the task affects IL performance and the relationship between development of particular subsystems in the context of the wider IL grammar.

Meisel, Clahsen and Pienmann's, (1981) work is an investigation of IL in context. They examine the interactions between the development in two related subsystems (word order and certain movement rules), in untutored migrant workers acquiring German. The researchers found that through the developmental stages in German, word order temporarily involves learners in deleting other elements (e.g. Verb or Object Noun), over which one has to move. In an attempt to incorporate the new, more complex sets of movement rules at each stage, learners displayed such deleting in their ILs. Meisel et al., justly, point out that it would have been misleading to classify learners as more or less advanced in German, only on the basis of the presence or absence of the deleted elements in their ILs. Because the acquisition of those elements depend upon the stage of development attained by learners of different types in other related areas of the grammar.

Investigating IL linguistic and conversational contexts means a discourse analysis of IL which "is not a distraction from the (traditional/classical) study of the development of syntax", since:



"by clarifying structural organization at other levels, one can leave in clear relief the syntactic apparatus used to accomplish cohesion, procedural repair work, interpersonal goals, and the referential semantic communication that traditionally was thought to be the primary function of syntax" (Ervin-Tripp, 1977: 18).

Her comments indicate the interdependence of linguistic levels in SLA, which is also expressed by Givon's (1979a; 1979b and 1981) functional-typological syntactic analysis. He views the linguistic coding devices of word order, intonation and morphology as to contribute differentially to the marking of functional domains (e.g. temporality) of language. In addition, from a psycholinguistic perspective, Hatch (1983a), points out that linguistic levels "leak". In other words, each of the traditional levels (phonology, morphology, lexis, syntax, semantics and discourse) is affected to varying degrees by one or more of the others. According to Hatch, these are interrelated levels of psycholinguistic planning.

This 'leaking', however, is inevitable since IL is a dynamic continuum, (Sections 3.1.5.2.; 3.1.5.3.). An example of this is Sato's (1983, 1984) study, in which he found syllable structure transfer from 2 Vietnamese that have a delaying effect on the acquisition of the English past tense inflection. Vietnamese does not permit syllable-final consonant clusters; while syllable-final position for clusters is more marked cross-linguistically. Since English past tense marking on verbs often creates clusters in final position (e.g. walked:/kt/), Sato concluded that the lack of the uninflected forms demonstrates first language transfer at the level of phonology to be a critical factor in accounting for a characteristic of the IL at the morphological level.

#### 2.2.2.5.1. The Effect of Input on SLA

Studying IL in context emphasizes the role of linguistic environment in SLA, which seems essential for anyone wishing to explain IL development. Language input (linguistic environment) encompasses everything the language-learner hears and sees in the TL. It may be: (1) formal teaching including only language classroom activities and a few books and records; (2) informal including a wide variety of situations (e.g. conversation with others, chatt-



ing with friends, watching T.V. etc.); (3) it could be both formal and informal. Consequently, a distinction between formal and natural/naturalistic language environment could be made (e.g. Dulay et al. 1982; Felix, 1978; Wode, 1976a). In the former, the focus of the speaker is on the form of the language, whereas in the latter, the focus is on the content of the communication. Formal language instruction versus naturalistic SL environment (i.e. untutored learning), becomes of special importance when the learner's performance is to be analyzed in terms of the learning/acquisition distinction proposed by Krashen's Monitor Model (Section 3.2.1.). Learning an SL in a naturalistic environment obviously favours unconscious learning (i.e. acquisition in Krashen's terminology). Formal language instruction, on the other hand, emphasizes conscious learning processes.

A natural language environment appears to enhance the development of communication skills in an SL in both foreign and host (i.e. SL-speaking) environments. This is shown in studies like Carroll, (1967). In an attempt to demonstrate the superiority of a natural over a formal language environment, he surveyed 2782 college seniors, who were majoring in French, German, Russian and Spanish in American colleges and universities. Not surprisingly, he reported a strong relationship between time spent abroad in a host language environment and the subjects' performance on Foreign Language Proficiency Test. His conclusion is that those who reported a year's study abroad performed best; those who reported a summer abroad or a tour performed next best; and both of these groups "outperformed those who had studied only in a foreign language environment" (in this case the U.S.), in formally structured classroom situations (Carroll, 1967: 132-136).

On the other hand, the foreign language classroom situation, usually affords little opportunity to discuss matters of interest to the learners. Saegert et al. (1974) examined English proficiency in 141 students at the American University in Cairo and 71 students at the American University in Beirut. The researchers gathered information regarding their subject's proficiency of English, the number of years of formal English language instruction and whether

they had had experience learning academic subjects in English or in another foreign language. Many of the subjects had attended schools in which academic subjects were taught in English. The investigators did not find a steady improvement in English proficiency as the number of years of English as a foreign language (EFL) study increased. Instead, they found that the students' exposure to English as a medium of instruction in subjects (e.g. biology), showed a more systematic relationship to level of proficiency than the amount of time they had spent in the English language class.

Similar findings are reported in Terrell et al.'s (1980) study. Through EA, the researchers examine the acquisition of Spanish question formation by learners of Spanish as a foreign language. Amongst other things, their study is an investigation of whether syntactic patterns, especially word order are acquired, and not learned, as claimed by Krashen's Monitor Model (refer to Section 3.2.1.) Terrell et al. reported that:

"Our research shows clearly that if students answer a large number of questions in a meaningful context, they can internalize much of the syntax of Spanish question formation" (emphasis mine) (1980: 160).

Meaningful or communicative context refers to Terrell's (1977) Natural Approach<sup>20</sup> to language teaching, i.e., non-academic context. She argues that most of the problems in learning an SL in formal setting, stem from the fact that the sentences uttered in the classroom by the teacher or student have no communicative context, since they are created for the practice of some morphological or syntactical items being studied.

In order to acquire as well as learn the language she proposed 3 guidelines: (1) students should be permitted to use L1 (with SL)

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20. As previously mentioned (Section 2.2.2.3.), Krashen and Terrell, (1983) present a natural approach to SL teaching, that is mainly based on Krashen's (1981) natural order of morpheme acquisition.

in the initial stages of language to comprehend SL; (2) students' speech errors should not be corrected; and finally (3) class time should be devoted completely to communication experiences, relating learning activities to outside the classroom. Terrell justifies her proposal by asserting that "if we are to raise our expectations for oral competency in communication we must lower our expectation for structural accuracy" (1977: 326). She goes on demonstrating from the literature that primary factors which influence SLA are effective not cognitive (refer to Sections 2.2.2.6. and 3.2.1.5.); therefore, Terrell argues that the most important consideration in all of the components of any 'natural approach' must be to make students feel at ease during activities in academic situations.

Dulay et al., (1982) suggest that language performance is enhanced when learners are exposed to natural language input, preferably from peers or members of the same ethnic group when focus is on meaning (not on linguistic form) and on comprehensible concrete referents (here-and-now), and when learners are not forced to speak before they are 'ready' to do so (a 'silent' period). Such characteristics produce a favourable macro-environment. On the other hand, the salience and frequency of language items and the correction of errors, which have often been assumed to be favourable features of the linguistic micro-environment are said to be of questionable value.

Quite simply, the studies and thoughts mentioned above indicate that, crucial differences in the linguistic input will obviously lead to differences in the linguistic output. Cognitively however, SL learners who follow formal instructions are similar to those acquiring language in a naturalistic environment. Felix, (1981) investigated the processes and mechanisms by which students learn an SL when they are exposed to the SL data only during classroom hours. Thus, he examines the effect of formal instruction on SLA; namely the development of interrogatives and negatives in 34 German high school students learning English as an SL, under classroom conditions. After observing his subjects for 8 months, he finds that students' utterances show many structural

features which are also known to characterize L1 and naturalistic SLA. Thus, he reports "(It) appears that formal instruction cannot eliminate or suppress those processes which constitute man's natural ability to acquire language(s)" (Felix, 1981: 87). The main contrast between his subjects (following formal instruction) and naturalistic learners is that the former "were continuously forced to produce structures for which developmentally, they were not yet ready" (Felix: *ibid.*).

The relationship between language proficiency and types of linguistic environments is further investigated in Upshur's (1968) study, in which the focus was on the formal-informal distinction. The study was of 30 university law students, divided into three groups:

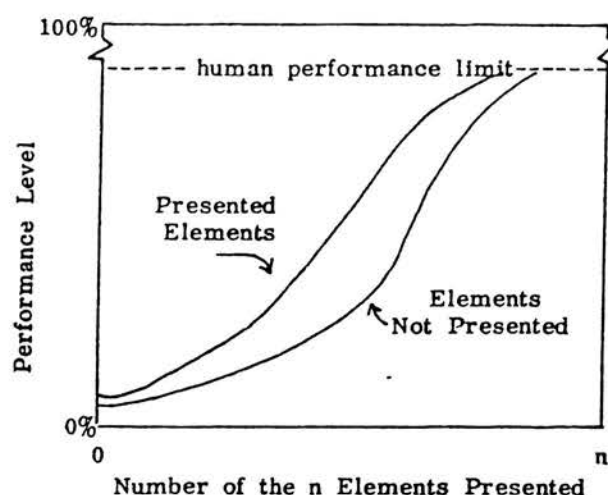
- a) law classes with no English as a second language (ESL);
- b) law classes with 1 hour ESL;
- c) law classes with 2 hours ESL.

At the end of the seven week period, it was found that the difference between the 3 groups was insignificant. Upshur concluded that no significant effects of language learning attributable to amount of language instruction were found (p. 111). He is of the view that "foreign language courses may [...] be less effective means for producing language learning than the use of language in other activities". Thus, the most efficient FL/SL learning, to cite him:

"is informal and occurs when the learners must make communicative use of the language [...] and that the internal structure underlying a set of sentences of a foreign language is not completely learned by presentation and practice of that set of sentences" (Upshur, 1968: 111).

An important contribution of this study is the hypothesized learning/performance curves of taught and untaught linguistic elements (Figure 2.3.). The figure below indicates that presented elements 'are learned somewhat better' than elements not presented. Side by side with learning taught forms, learners are also able to learn untaught forms in the course of a meaningful, communicative use of the TL. This is attributed to the learner's

"perceiving the internal structure of presented elements and somewhat more slowly inferring structure for the larger system" (Upshur: 1968). Additionally, Upshur's hypothesis presented by the learning curves emphasizes as well as explains the value of formal teaching and informal exposure and use. That is, the relationship between length of residence and SLA reviewed in Section (2.2.2.6.3.).



Hypothesized Learning Curves for a Closed Language System of n Elements

Figure 2.3.

(From Upshur 1968: 123)

Hyltenstam, (1978b) investigates the acquisition of Yes/No question formation by 160 learners of Swedish as an SL. In correlating progress with non-linguistic variables, he reports a positive relationship between the amount of progress and the number of years of formal education subjects had received. Most interestingly, he found an inverse relationship between length of residence and the rate of progress (refer to Section 2.2.2.6.3.).

Whilst appeals to 'nature' are very attractive, the implicit idea that a general theory of SL teaching and learning has to be developed mainly on the basis of research on first and SL acquisition which observes and measures performance in a 'natural' manner and after 'natural' exposure to language (Dulay *et al.*, 1982; Krashen and Terrell, 1983), is questionable or at least limited. For

instance, absolute statements like "Correction of grammatical errors does not help students avoid mistakes" and "Correction of grammatical errors does not help students to avoid them" (Dulay et al., 1982: 253 and 263 respectively), should be seriously questioned. Educators and researchers should take such statements as challenges, as hypotheses, not as proven facts. Certainly some students accept error correction. Similarly, surely, some students benefit from them. Thus the interesting question is Why and How do some learners benefit from error correction and not others?

The crucial problem with statements like the ones previously quoted is that they are too broad. If one takes them literally, logically speaking, finding one student who benefits from error correction would refute the statements. In science, most statements are more reasonably couched in terms of statistics and probabilities. A weaker, more appropriate statement would then be "Error correction methods in their present form do not typically help students avoid errors" (Takala, 1984).

#### 2.2.2.5.2. The Effect of Task on SL Performance

The effect of task on IL performance is one of the factors that has attracted the interest of researchers not only in studies of IL in context, but also in other types of IL studies. The special concern with this possible cause for variability last but not least developed in what one might call the post-MOA studies era (Section 2.2.2.2.). As mentioned above (Section 2.2.2.2.4.1.) one of the major criticisms against these studies focussed on the effect that the elicitation instrument (BSM) used presumably exercised on the results.

Ever since then, a number of studies have documented the variability phenomenon when using various combination of tasks (e.g. Larsen-Freeman, 1976; Rosansky, 1976 and others). Therefore, some researchers have focussed on the theoretical aspects of task variation in IL (e.g. Hyltenstam, 1983; Tarone, 1979, 1982, 1983). In an attempt to explain the variability phenomenon, models of SL learner's competence have been suggested (e.g. (1)



dual competence models: The Monitor Model (Krashen: 1977, 1978, 1981); The Explicit and Implicit Knowledge Model (Bialystok: 1978); as well as (2) other models, e.g. The Capability Continuum Model (Tarone: 1979, 1982 1983); The Multi-dimensional Process (Meisel et al.: 1981). (Some of these models will be discussed in detail in Section 3.1.). A comprehensive and accepted account, however, for this complex phenomenon; (i.e. variability) is still lacking.

The notion of variability leads us to survey other types of SLA studies; namely, studies which show the effect of non-linguistic variables.

#### 2.2.2.6. Studies of the Effect of Non-Linguistic Variables

Among the ideas which have survived from the heady debates of the 1960s and early 1970s, and for which there is now considerable empirical evidence, is the view that the language learner brings to the acquisition process more than blind responses to stimuli. Genetically, as a human he or she comes equipped with a biologically endowed apparatus for processing language and to this extent all humans are identical. However, there are also individual factors which play important roles, particularly in SLA. These variables will be divided (here) into:

- I. Biological factors<sup>21</sup> e.g. age.
- II. Social-psychological factors, e.g. personality, attitude, motivation, etc.
- III. Length of residence.

As Hatch, (1983a: 186) puts it "The learner is neither a language-producing machine working on unrestricted input nor the grand imitator of unanalysed input".

##### 2.2.2.6.1. Age

There are, of course, vast differences between child and adult SL learners. The adult, for example, wishes to converse about a wider and more sophisticated range of topics. Taylor (1974),

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21. We believe that there is no effect of sex on SLA, thus, although sex is a biological factor, it will not be discussed here.



justly argues that "the adult's more advanced cognitive maturity would allow him to deal with the abstract nature of language even better than children" (pp. 32-33). Beyond that, however, we have been told that after some set time in maturation, normally 11-13 years old, languages must be taught, not just acquired. At a point of physical maturation we are told that interference (negative transfer) becomes a dominant force in the learner's language development (Butterworth and Hatch, 1978: 231).

#### 2.2.2.6.1.1. Biological Maturation

The most prevalent explanation for this phenomenon is that, in the process of biological maturation, the flexibility necessary for mastery of SL is lost. Penfield and Roberts, (1959) as well as Scovel, (1969) maintain that the difficulty adults have in learning SLs is the result of the completion at puberty of lateralization of the brain. Lenneberg, (1967) maintains essentially the same position. He feels that "there is evidence that the primary acquisition of language is predicated upon a certain developmental stage, which is quickly outgrown at puberty" (p. 142). He uses data from aphasia and mental retardation to support his claim.

Some of the evidence from the optimal age hypothesis has been discounted. Krashen, (1973) for example, documents that cortical lateralization is completed not in the 11-13 age range, (Penfield and Roberts, 1959; Lenneberg, 1967; Scovel, 1969), but rather by age 5. Hence, it does not account for the difficulties in SLA after puberty; since this would mean that SLA after age 5 should be as difficult as after 13, if lateralization was the primary evidence. Krashen used the same Lenneberg's data and speculated that lateralization may correspond to normal first language acquisition and as a result would not produce a barrier to adolescent and adult SL learning.

Moreover, there are adults who do become bilinguals, even to the extent that their speech becomes indistinguishable from that of native speakers of the TL. Hill, (1970) has shown evidence from various culture groups where SL learning to native-speaker

competence levels for adults is an expected fact, necessary for marriage and/or business. Obviously, people do learn languages later in life. Krashen, (1982: 10) believes that "adults can access the same natural 'language acquisition device' that children use".

#### 2.2.2.6.1.2. Formal Operations

One alternative explanation that has been proposed for child-adult differences is Piaget's 'formal operations' stage (Inhelder and Piaget, 1958). At around puberty, many adolescents pass through a developmental state Piaget calls "formal operations". Children (aged 7 to about 11), who are still 'concrete' thinkers, may arrive at abstract concepts, but these abstractions derive directly from experience with concrete objects. The formal thinker, on the other hand, has the ability verbally to manipulate relationships between ideas in the absence of prior or concurrent available empirical propositions. For formal thinkers new concepts are primarily acquired from verbal rather than from concrete experience (Ausubel and Ausubel, 1971: 63-66). Additionally, the formal thinker has a meta-awareness of this developing system of abstractions which seems to be reflected on the rules he possesses and on his thoughts. The formal thinker can also develop general solutions to problems (i.e. ways of using abstract rules to solve a whole class of problems). Finally, the formal thinker can conceptualize his own thoughts, take his mental constructions as objects and reason about them. That is, the formal thinker can 'step back' from his ideas and have 'ideas about ideas'. (For further discussion about this topic see Elkind, 1970; Dulay et al., 1982).

Several scholars have argued that the adult's cognitive superiority should make adults better than children at SLA. Genesee (1977), (while not referring specifically to formal operations), notes that:

"the adolescent's more mature cognitive system, with its capacity to abstract, classify and generalize, may be better suited for the complex task of second language learning than the unconscious, automatic kind of

learning which is thought to be characteristic of young children". (p. 148)

To support his argument, Genesee cites several studies that indicate a superior rate of SL achievement in classroom studies for older learners. His conclusion is that:

"older students seem to be more efficient learners than younger students. That is to say, given the same amount of instruction, or even less, adolescents will learn as much or more than younger children". (Genesee 1977:150).

Nevertheless, the optimal age hypothesis predicts that natural and complete acquisition (i.e., native-like use) of language only takes place between certain ages (2 and puberty), and that the processes of language acquisition in children and adults are quite different. There is some data that is consistent with the first of these two predictions. Children learning English as an SL seem to be less dependant than learners on formal linguistic environments. Adults generally do not attain as high a level of proficiency as children do in SL learning.

To illustrate this finding we report the following studies on pronunciation and syntax. First, Scovel's, (1977) study is an investigation of the question of age and the acquisition of phonology. He found an interesting relationship between the age and the ability to distinguish natives from non-natives (who were pre-selected; only those with 'excellent pronunciation' were used) speakers of English. His youngest subjects (5-6) were better than his adult subjects who "were nearly completely successful". Scovel reported:

"It is [ ... ] possible that the competence to recognize non-native speech is simultaneous in its development with the performance limitations which account for the production of non-native speech". (Cited in Dulay et al., 1982: 82)

Scovel, himself, (1969) states that:

"almost everyone learns the sound patterns of a language perfectly as a child, and yet, almost no one can learn the sound patterns of a language perfectly as an adult". (p. 245).

Second, Patkowski, (1980) found evidence that age of arrival is related to syntactic proficiency. In this study, 67 immigrants who had come to the U.S. before age 15 and who had lived in the country for at least 5 years were tested for syntactic proficiency in English and were also administered a questionnaire to gather information concerning practice and instructional variables. The results indicate that learners whose exposure to an SL begins before the age of 15 years achieve higher syntactic proficiency in the TL than adult learners.

For the hypothesis of different processes of SLA between children and adults, there are implications that these processes (of child and adult's SL learning) are not entirely different. Bailey et al., (1974) reported a difficulty order for grammatical morphemes for adult learners of English as an SL, which was not significantly different from that found in children learning English as an SL reported by Dulay and Burt, (1973). This suggests that no major change in at least certain language strategies takes place at puberty. Bailey et al. concluded that despite previously observed differences between children and adults in learning environments and in ultimate potential, puberty does not represent an abrupt change in the operation of language acquisition.

Taylor (1975a), also discussed the influence of age on SL learners. His findings showed that older SL learners tend to make more use of overgeneralization than transfer from NL. The younger the learner the more difficult it is to distinguish L1 and L2 as separate systems. With learners up to the age of about 4, the learner may behave as if he or she is learning 2 dialects or varieties of one communicative system, with incomplete functional separation.

Dulay et al., (1982) note that when the learners have reached the stage of 'formal operation', they appear to engage more in monitoring, i.e., in conscious learning of linguistic rules and extracting of linguistic patterns. Similarly, if the task requires manipulation of linguistic forms or translation, conscious monitoring is said to be preferred. The authors state that

the "belief that children are better at language acquisition than adults is supported by both scientific and anecdotal evidence", (Dulay et al., 1982: 78). In comparing the relative effectiveness of children and adults in learning SL morphology and syntax, the authors assert that "Adults may appear to make greater progress initially, but children nearly always surpass them" (p. 78). Dulay et al. advance (i) biological factors (development of cerebral dominance); (ii) cognitive factors (more mature cognitive system, including meta-awareness of language); and (iii) differences in language environment, as possible reasons for early advantage for adults but later superiority by children who acquire the new language system unconsciously.

Dulay, et al.'s last quoted statement as well as recent findings in SLA research, highlight the important distinction which needs to be made between (1) rate of acquisition and (2) the level of proficiency eventually attained by learners. In a review of the available literature, Krashen, Long and Scarcella, (1979) present evidence for 3 generalizations concerning the relationship between age, rate and eventual attainment in SLA. First, adults proceed through early stages of syntactic and morphological development faster than children. Second, older children acquire syntactic rules faster than younger children (where time and exposure are constant for the above 2 points). Third, younger children who begin natural exposure to SLs during childhood generally achieve a higher level of attainment. For the first two generalizations, we find studies which include older children (11 to 17 years), for example, Ervin-Tripp, 1974; Fathman, 1975 report that this group was the most rapid in syntactic development, having a faster rate than either younger children or adults.

Whilst it is recognized that differences do exist which can be related partially to age, it is also recognized that there are a number of different dimensions to language learning and different aspects of success. Therefore, some researchers, Cummins (1979), for example, distinguish between 'Basic Interpersonal Communication Skills' (BICK); e.g. accent and oral fluency; and 'Cognitive/Academic Language Proficiency' (CALP). The latter is

seen as being strongly related to overall cognitive and academic skills; whereas the former skills are independent of these factors. Adaptation of this distinction would account for what seem contradictory findings relating to age and SLA; namely, that younger children (3-5 years) are superior in measures of pronunciation and oral fluency, while older learners are superior in measures of syntactic and morphological development.

#### 2.2.2.6.1.3. Social and Psychological Changes

There are several indications in literature that language learning difficulties after puberty may be related to the social and psychological changes an individual undergoes at that age. Larson and Smalley, (1972) state that:

"As puberty approaches and the individual is concerned with the consolidation of his personality it apparently becomes more difficult for him to submit to the new norms which a second language requires. As an individual's dependence on others gives way to his own independence in satisfying needs, there seems to be less pull toward the internalization of new norms required by a second language" (p. 16 ).

Similarly, Curran (1961) feels that children acquire SLs more easily than adults, because they are less threatened by the sounds of the new language and because they are willing to depend on others for support in learning. The adult, on the other hand, has acquired a basic security in his own language and is not ordinarily threatened by rejection when he speaks it. When the learner attempts to communicate in the new language his normal linguistic security is undermined and he finds himself in a dependent state which he may resist.

Furthermore, Macnamara, (1973) argues that children exposed to speakers of the TL learn better than adults, because they get involved in 'real communication' in order to understand what their peers are saying to them as well as in order to make what they want to say clear to their peers. Adults, he feels, do not learn SLs perfectly, because they do not get involved in such real communication. One reason for that, could be, socialization. That is, because of the way society functions, adults may not usually



be provided with extensive enough opportunity to develop their SL skills through genuine communication with native speakers. In addition, there are problems of adult's attitudes, motivation and/or emphatic capacity which are brought about by either general social-psychological development or language and culture shock preventing the learner from getting involved in communication which should lead to successful SLA.

The most important argument here is that children are no better equipped cognitively to learn an SL than are adults. In terms of cognitive ability, both are equally capable of becoming bilingual. Thus, before any claims are made about children learning the syntax of SL faster after the initial period is over, there should be a careful control of time actually engaged in SL use, internal as well as external (covert as well as overt). For instance, it is not enough to account only for length of residence in a host environment. That may be a seriously biased proxy for actual engaged time. It should be known what proportion of that time is actually devoted to active cognitive contact with SL. Similarly, it would probably also be necessary to control the degree of reinforcement that children and adults receive from the environment.

#### 2.2.2.6.2. Attitude and Motivation

All the above mentioned positions suggest that social and psychological maturation may be as important or perhaps more important than neurological maturation, in accounting for difficulties in adult SL learning. The theoretical model of the role of attitudes and motivation in SLA was initially proposed by Lambert (1963; 1967) and later expanded by Gardner (1973; 1979; 1980). Gardner proposed a social-psychological model of SL learning that includes 3 basic components: (a) attitudes, (b) motivation, and (c) SL achievement. The learners positive or negative attitudes towards the native operators of the TL, can either enhance or inhibit language acquisition. In addition, learner's evaluation of his teacher(s), parents' view of the TL as well as the learner's preference for his own culture over that of the target culture or vice versa can affect success in SL learning.



According to Gardner's social-psychological model of SL learning, the learner must have positive attitudes towards the TL, the TL group and learning if he/she is to sustain the motivation necessary to undertake the efforts required to master the TL. Affective variables, such as attitudes and motivation, are assumed to produce differences in behaviour which in turn produce variance in SL achievement. Positive attitudes towards the TL and the native speakers of the TL are expected to produce a willingness to communicate with them (native speakers); this, in turn is expected to augment learning of the TL. On the other hand, negative attitudes are expected to result in lower achievement. Whilst in Gardner's model, attitudes are believed to cause variation in SL proficiency, the case is different in Oller and Perkins's (1978) views. They, correctly, argue that there is some kind of interaction between SL achievement and attitudes/ motivation, such that each affects the other (Oller and Perkins *ibid*: 418-419). The relationship between variance in affective variables and differences in SL proficiency could be schematically presented as follows (Figure 2.4.).

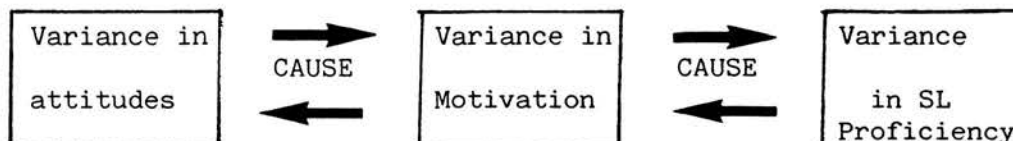


FIGURE 2.4.

As far as the motivation factor is concerned, it represents a psychological construct of a complex and abstract nature; it can hardly be reduced to its basic components. It could be defined as "the combination of all factors that move a person to action" (Mahieu, 1984: 24). In the late 1950's and 1960's, Lambert, Gardner and others began to examine amongst other things the influence of motivation on SLA.

The motivation factor, is said to contain 2 components: (1) an integrative orientation; and (2) an instrumental orientation. A learner who is integratively oriented is interested in learning the SL in order to meet and communicate with valued members of the TL community. Gardner *et al.*, (1974) argue that the development of integrative motivation might foster ego permeability such that the learner is able to partially and temporarily give up his

separateness of identity from the speakers of the TL in order to incorporate a new identity which is essential to bilingualism.

Thus:

"an integrative motive reflects a strong motive to learn the language of another cultural group because of a desire to communicate with members of that community. Implicit in this definition is a positive effect towards that community. The focus, however, is on wanting to communicate directly with valued members of the second language community. In the extreme case, it might be suggested that the individual wants actually to become a member of that group" (Gardner et al. 1974: 12-13).

Taylor, (1973) after a review of the relevant research concludes that what may be necessary for the adult to acquire real native proficiency in SL "is a persevering motivation". That is the desire to identify with another culture group integratively and the ability to overcome the emphatic barriers set up by ego boundaries.

An instrumentally oriented learner, on the other hand, is one who has little interest in the native speakers of the TL; but, nevertheless, wants to learn the language for more self oriented or utilitarian reasons (e.g. getting ahead in one's occupation or gaining social recognition). The former type of motivation (i.e. integrative motivation) seems to be somehow powerful. However, in environments where there is an urgency about learning an SL; e.g. English in India (Lukmani, 1972); or in Philippines, (Gardner and Lambert, 1972:121 ), it was found that instrumental motivation was very effective.

In a recent work Mahieu, (1984) examines the effect of attitudes and motivation of ESL learners on their competence and control. She reports an experiment which tested 19 Dutch learners of formal English study for their mastery of four features of English structure in tests varying in their requirements for competence or control; (i.e. performance) and which attempted to measure their attitudes and motivation. "The results indicated that the learners' attitudes and motivation are clearly related to control (performance); no such relationship was found for competence"

(Mahieu 1984: 24). The insignificant correlation (.24) between attitudes/motivation of SL learners and their competence may be the result that certain variables e.g. aptitude and intelligence can not be entirely controlled by experiment techniques. Yet, it may also be that there is no significant relationship between attitudes/motivation of SL learners and their competence.

Theivanauthampillai and Baha, (1984) undertook a study to assess the role of three student variables; namely, intelligence, language aptitude and motivation, in the acquisition of ESL. A total of 297 students from various schools in the Fiji Islands were administered psychological instruments to obtain measures on intelligence, language aptitude and motivation. The scores were then correlated with the students' scores on English language. Not surprisingly, among the 3 variables, motivation registered the lowest correlation, (the highest, of course, was intelligence), with attainment in English for the sample as a whole and for the different ethnic groups which were Fijianes, Indians and Others. The last category 'Others' referred to Europeans, part-Europeans, (children of mixed marriages) and Chinese.

#### 2.2.2.6.3. Length of Residence

A number of investigators have attempted to study the effect of length of residence on SLA. The results, however, have been inconclusive. In some studies, for example, it has been reported that there is no effect of length of residence on SLA; namely, English (e.g. Oyama, 1976; and Patkowski, 1980). In these studies, the average of time the subjects spend in SL speaking environment, was very high (minimum of 5 years and in many cases as long as 10 or 20 years). Oyama, (1976) and Patkowski, (1980) were mainly interested in the effect of age of arrival on SLA.

In other studies, on the other hand, such as those by Fathman (1975); Walberg et al. (1978); Cummins (1981), in which the length of residence mean is 3-4 years, a correlation (for children) between length of residence and proficiency was found. As for adult learners, Klein and Dittmar's, (1979) study of adult immigrants working in Germany, indicates that any relationship

between length of stay and proficiency is only possibly present in their group of less than 16 months length of residence. Hyltensam, (1978b) found an inverse relationship between the length of residence and the rate of progress. Rate of progress from Time I to Time II (Section 3.3.4.1.) was great among learners with only 2-4 months length of residence. From this he concludes "that the greatest progress is made in the initial stages of learning the syntactic areas studied".

Walberg et al's, (1978) study has contributed a lot of our understanding of the effect of time on SLA. The researchers investigated the relationship between length of residence and SLA in a sample of 352 Japanese speaking children living in the U.S. from birth to 12 years. Using teacher and self-reports of proficiency in their subjects' native and second languages, they reported that proficiency in English did not relate to age of arrival; but rather depended on time of residence. Among the three models they employed (linear, early age sensitivity and diminishing returns), they found that the diminishing returns model best accounted for the effect of time on acquisition. The researchers asserted that:

"the children in the sample acquire English as a function of time in the U.S., the function does not appear to depend on the age of their arrival. In children of all ages in the sample, acquisition proceeds at a fast rate initially, but the amounts of gain diminish with time" (Walberg et al. 1978: 436).

In their study, the teacher ratings indicate that learners gain native-like reading proficiency in 42 months. From the data, Walberg et al. estimated that equal gains in proficiency are made on average in the first 2 months, the next 5 months, the following year and the next 8 years. The failure to find a relationship between length of residence and proficiency in the studies with long length of residence may be explained by this levelling off effect (Borland, 1984). Although some studies indicate that the levelling off effect was at around 3 years length of residence, Cummins, (1981) argued from his data of immigrant children in Canada that it can take up to 7 years for more complex linguistic skills to level off.

Another study which shows a strong relationship between time spent in the host country and best performance is that of Carroll's, (1967) discussed earlier (Section 2.2.2.5.1.).

#### 2.2.2.7. Different SLA Studies = Phases of One Goal

The ultimate goal of SLA research is to understand and then facilitate the process of SL learning and consequently facilitate SL teaching, by studying the phenomenon of 'errors' within a scientific framework that is consistent with both linguistic theory and learning theory. All SLA research, either explicitly or implicitly is pointed in this direction. We wish to know What it is that is acquired; How it is acquired; When it is acquired; as well as Why this item and not some other.

Thus, SLA research cannot be easily divided. For instance, in spite of the attack on both external grounds (of empirical validity) and internal (theoretical foundation), CA today, however, is not entirely on the defensive, not only do "messages of hope" keep appearing from time to time in studies like Schachter, (1974); Wode, (1976a) and others. The proponents of alternate approaches (EA and IL) implicitly or explicitly incorporate CA in their methodology, although there are obvious differences in the attitude towards learner's performance and particularly towards 'errors'. Whilst CA is exclusively concerned with that aspect of the learners performance which can be predicted from the characteristics of his or her NL; IL avoids this limitation. Methodologically, IL may be said to incorporate the assumptions of both CA and EA. CA contrasts the learner's NL and the TL, and conventional EA involves contrast between the learner's performance and the TL. IL, on the other hand, takes all 3 systems (NL, TL and learner's language) into account. Explicitly IL incorporates the CA of the learner's IL with both his NL and the TL. The main difference is that in IL, the CA is an initial filtering device, making way for the testing of hypotheses about the other determinants of the learner's IL. As for EA, its aim is to describe the whole of the learner's linguistic system and to compare it with that of TL. That is why EA is a "brand of comparative linguistic study" (Corder, 1973a: 274).

CA, however, places the L1 in an undeserved central place as a reference point; while EA prompts a wrong notion of 'errors' because the learner's linguistic system has been analyzed only as deviations from the TL norm. There was no attempt to study the learner's language in its own right. Nowadays, errors are being analyzed to know more about learning and communicative strategies and processes, and to provide an indication of learning having taken place. Still, an ultimate understanding of the event (SLA) itself, has not been achieved. Yet, strong the desire, one would not expect, given the vast and deep complexities of human cognition as well as the complexities of a human being himself, to be able to come up with a single explanatory heuristic theory for the language learning/acquisition event. No type of SLA, therefore was perfect enough to achieve such success. Various partially valid explanations, however, for the outcome of language learning, both first and second, have been, and still are being discussed. These explanations for SLA include accounts based upon theoretical models and hypotheses about SLA are discussed in Chapter 3.



### CHAPTER THREE

#### METHODOLOGICAL FOUNDATION OF SLA RESEARCH

In this Chapter theoretical models and hypotheses about SLA are discussed (Section 3.1.). Section 3.2. discusses models of the nature of second language learner's competence. The study of variability phenomenon in language and the most recent techniques now available for analyzing variability are outlined in Section 3.3., as well as research into SLA of syntax employing these techniques. The present state of SLA research is presented (Section 3.4.). The final Section (3.5.) deals with the integration of the previous research into the present investigation.

### 3.1. THEORETICAL MODELS AND HYPOTHESES ABOUT SLA

#### 3.1.1. Introductory Remarks

Following the discovery of the shortcomings of the CA hypothesis and the evolution of EA, attempts were made to develop an understanding of the processes of SLA. Emphasis was shifted from studying and analyzing the systems of the NL and the TL, to the analysis of the learner's language which began to be seen as a phenomenon to be studied in its own right.

The most important influence on the studies of IL phenomenon has been the findings of the 'post-structuralist' studies of child language acquisition (e.g. Cook, 1969, 1973; Brown, 1973) in which child language learning was treated as progression of self-contained, internally structured systems, getting increasingly similar to the adult language systems. As a sequence SLA theories emerge in which the successive linguistic systems that a learner construct on his way to the mastery of a TL, have been variously referred to as "idiosyncratic dialects" (Corder, 1971), "approximative systems" (Nemser, 1971) and IL (Selinker, 1972).

#### 3.1.2. The Creative Construction Hypothesis (CCH)

The notion of CCH is not new in SLA. The suggestion was first put forward by Palmer, (1917). Corder, (1967) proposed the innate hypothesis for language acquisition to SL, postulating the same mechanisms, procedures and strategies for SLA as these used



to acquire first language, (Chomsky, 1959). Essential to this hypothesis is the learning process of SL which involves the activation of the internal language learning mechanisms to construct the grammar of the TL from the data to which the learner is exposed.

An important issue is the relationship between first and second language acquisition. A respect for learners' error remains one of the more productive post-behaviourist insights, as also does the notion of some element of natural order in the acquisition of linguistic items. For Dulay *et al.* (1982), the latter is "one of the most exciting and significant outcomes of the last decade of second language research". Thus, Dulay and Burt, in a series of studies (1972, 1973, 1974 and 1975a) as well as drawing on studies by Ravem, (1968); Milon, (1972) and others (Section 2.2.2.2.) put forward the L2=L1 hypothesis (Section 2.2.2.3.5.1). In a later paper, Dulay and Burt, (1977: 67) defined CC in SLA:

"Creative construction in language acquisition refers to the process by which learners gradually reconstruct [elsewhere the term construct was used] rules for speech they hear, guided by innate mechanisms which cause them to formulate certain types of hypotheses about the language system being acquired, until the mismatch between what they are exposed to and what they produce is resolved".

In an attempt to explain their hypothesis, they explore the way in which the input is mediated and produce a model that takes into account sources which influence the individual learner's learning capacity, (Figures 3.1.A and B). According to Dulay *et al.*, (1982) as well as Krashen, (1982), the 'internal mechanisms' or the '3 internal factors' are the Filter, the Organizer



Figure 3.1 Model A (from Krashen 1982:16, 32)

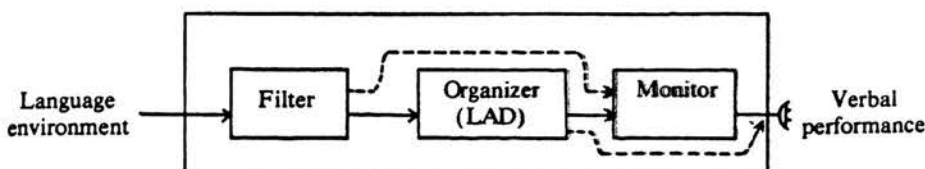


Figure 3.1 Model B (from Dulay, Burt, and Krashen 1982:46)

and the Monitor. As the Figures (3.1. A and B) indicate, the Filter acts as a screen of language input from the language environment and if the focus is on communicating meaning, the intake is then processed subconsciously by the Organizer. As the name implies, the Organizer sorts out the new language system and builds up the rule systems of the SL in specific ways. In other words, the Organizer is responsible for the learner's gradual organization of the new language system. It is productive because it is responsible for generating sentences not learned through rote memorization. Finally, if the focus is on form, the Monitor undertakes conscious linguistic processing, (e.g. conscious memorization of rules and their application), and makes it possible for learners to consciously produce, correct and edit utterances. These 3 basic internal processes are affected by the learner's age (cognitive maturity) and personality, and these tend either to inhibit or enhance processing. The learner's NL is also assumed to have some, although very minor, effect on the innate learning processors.

Although Dulay and Burt suggested and discussed the above characterisations of the internal processing mechanisms, it should be noted here that other scholars had been working and unearthed more or less the same hypotheses about SLA. The Filter, for example, is also derived from the work of Schumann and his colleagues, (1976, 1978c). The Monitor is introduced by Krashen and his associates, (1981). Also, the Organizer is identified with Chomsky's LAD, (1959, 1969), and only is a different term for 'processes', 'mechanisms' and 'procedures' proposed earlier by Corder, (1967).

Dulay et al., (1982: Chapter 3) give a great deal of attention to the functioning of the Organizer and consider basic research in this area the most exciting to have been carried out in the 1970s. The basic thesis is that the outcome of the Organizer is very much the same in the acquisition of both L1 and L2. This is assumed to be due to the structure of the human brain. Thus, the interim, transitional constructions that learners use before they acquire a given structure are similar in L1 and L2 acquisition.

The same is said to be true of the types of errors made and of the order in which certain basic structures of L1 and L2 are acquired. Moreover the authors assume that there is a sharp dichotomy between two levels of consciousness. The Organizer processes language data and arrives at rules in a totally sub-conscious way when the exposure to language is 'natural' with focus on meaning, whereas the Monitor operates when the focus is on the acquisition of rules and norms (formal exposure).

The Organizer as it now stands is only a general postulation, elusive and vague. It is unable to specify the basic underlying principles of operation. To be fully operational, The Organizer has to be more concretely defined, since it does not bring us any closer to an understanding of Why and How the Organizer sorts out the new language system the way it does. It possibly needs a semantic-pragmatic base. War, (1984) argues that the principles that guide the operations of the Organizer is that "it operates on the basis of semantic and communicative utility." (p. 26).

Burt and Dulay (1980), themselves confess that "we can not yet fully specify its [learner's internal cognitive mechanisms] operational principles" (p. 56). That is, the CCH has not yet made us any closer to an understanding of the relationship between the innate language mechanisms and the way a language is learned in a sequential order. This is, however, not surprising since the concept of 'complexity' though appealing cannot be imported wholesale into acquisition studies. Chomsky and Halle, (1968), pointed out that derivational complexity in terms of the number of transformational rules applied is a good measurement of linguistic structures, but does not necessarily reflect the psychological, cognitive reality of these structures. As War (1984) argues, the fundamental problem seems to be the application of theoretical concepts and models meant for linguistic description within a particular framework, namely Transformational Grammar, (Chomsky, 1965) to acquisition studies, either first or second language acquisition, and the explanation of acquisition order.

(The notions of Monitor and Filter are discussed in Section

3.2.1.).

### 3.1.3. The Approximative Systems Hypothesis (ASH)

Nemser (1971), calls the linguistic system of learners an "approximative system", which he described as "the deviant linguistic system actually employed by the learner attempting to utilize the target language" (p.116). According to Nemser (ibid) the assumptions of this model are:

- a) At a given time, learner's speech is the product of an internally structured, linguistic system, that is distinct from NL and TL.
- b) Approximative systems (La s) at successive stages of learning form an evolving series.
- c) In a given contact situation, the learners approximative systems at the same stage of proficiency roughly coincide.

Following Nemser's hypothesis, Sampson (1978) adopts the model claiming that it is more satisfactorily fulfilling the requirements of a model than do either the CCH (Dulay and Burt, 1972) or Selinker's (1972), IL hypothesis. Thus, he introduces the Approximative Model which:

"Postulates a series of systems, unknown in a number which range from minimal knowledge of the second language to knowledge approximating that of a native speaker of the second language" (Sampson, 1978: 446).

The model has the following characteristics: (a) a system must be at least momentarily stable; (b) inherent variability which arises under conditions of language use (function), not language code (usage) or structure, causes the system to shift. The shifting (i.e. learning in this case) takes place because the learner's changing functions cause the learner to re-evaluate his or her linguistic hypotheses concerning the structure of SL; (c) as soon as the internal structure of the approximative system begins to shift, there is room for the learning of new syntactic or phonological forms. Thus, following the arrangement of the approximative systems, a new one comes into being; (d) up to the age of 3 or 4, learning is biologically based, then, it becomes socially based, since some of the functions of language are based on social interaction; finally (e) acquisition of syntactic

forms in SL cannot be smoothly sequential, because the learner is 'jumping' from one function to another. According to his view, Dulay and Burt's morpheme order is explained as due to the probability that their methodology evoked speech in only one function.

One of the problems in Nemser's (1971) hypothesis and Sampson's (1978) model of approximative systems: is the process by which learner's approximative system evolves. Although it appears it is not contradicting with the CCH, Nemser's hypothesis heavily emphasizes the importance of NL and, thus, on the interlingual transfer, for which there seems to be no place in the CCH. Another major problem emerges when the ASH is further defined "each approximative system is a system and therefore must be at least momentarily stable" (Sampson, 1978: 446). This, implicitly, indicates that these systems are necessarily discrete (Tarone *et al.* 1976a), when learners finish with one, they are ready to move to the other. Within this view, it appears that regression (Corder, 1977b: 87) is not considered. In a way, however, the approximative systems seem to be connected with developmental continua which are 'frequently changing' systems, or this is what Nemser (1971) appears to describe.

#### 3.1.4. The Pidginization Hypothesis

Nowadays, the 'cross-fertilization' of SLA and Creolinguistics has become more explicit than before. During the 1970's Schumann (1974a, 1975, 1976, 1978a, b and c) pioneers, if controversial, analogy between early SLA and pidginization. Before going any further, it will be helpful to remind the reader of the pidgin and creole concepts:

"A pidgin normally owes its origin to relatively causal, short-term contact between groups which do not have a language in common [ ... ] a pidgin can arise - on occasion, even in the space of only a few hours - whenever an emergency calls for communication on a minimal level of comprehension." (Hall, 1966).

A creole, on the other hand, is formed when a pidgin becomes the NL of a group of speakers. "It then complicates and expands in

order that it can function, not just as an auxiliary vehicle of communication" (Anderson 1980: 66), but as any other NL.

Schumann (1974a) originally suggested similarities between pidginization and early stages of SLA, and between creolization and later stages of SLA. Subsequently, he expanded upon the relationship between pidginization and early SLA in a data-based theoretical study, in which he asserted that early SLA involves a "pidginization process". Samarin (1971: 126) defines the concept of pidginization process as "any consistent reduction of the functions of language, both in its grammar and its use". Schumann (1975, 1978c) explains the early pidginization process or characteristics as resulting from social and psychological distance from the TL group.

In his paper, Schumann (1974a) presents "the social functions of pidgin and creole languages" as "the basis for the model of the development of the learner language" (p. 145). Within this model, the learner's language is seen to simplify<sup>1</sup> and reduce when it is restricted to a strictly communicative function, and to complicate and expand when it is extended to integrative and expressive functions. Schumann's (1975, 1978c) subjects were 6 Spanish-speakers learning English, but the focus of the study was Alberto, a 33 year-old, who evidenced less development in English than all five other subjects. Since:

"the simplifications and reductions in his [Alberto] English are characteristics of pidginization, we simply observe that his English shows evidence of pidginization" (Schumann 1978c: 71).

these 'simplifications and reductions'<sup>2</sup> in Alberto's English are:  
(1) use of the uniform negator 'no' for most negative utterances;

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1. Corder (1981a: 110), Wode (1981: 55) would not agree with this view as they logically pointed out that a learner cannot simplify what he does not possess.

2. These features are reported in various studies (Sections 2.2.3.2.1. (for EL1) and 2.2.3.3. (for EL2)).



(2) non-inverted questions; (3) no auxiliaries; (4) tendency not to inflect possessives; (5) unmarked verb forms; and lastly (6) deletion of subject pronouns (Schumann 1978c: 75).

By establishing that Alberto was at a great social and psychological distance from native speakers, Schumann was able to deduce a cause of effect relationships between the functional demand of the learner on the language being acquired and the form of the language he uses. As he declares:

"the speech of the second language learner will be restricted to the communicative function if the learner is socially and/or psychologically distant from the speakers of the target language" (Schumann, 1978c: 76).

Schumann's views of communicative function and pidgin is consistent with that of Smith (1972). Smith sees language as having 3 general functions: communicative, integrative and expressive.<sup>3</sup> Pidgin languages are generally restricted to the transmission of referential, denotative information between speakers.

In his article, Schumann (1978b) attempts to answer criticisms of the pidginization hypothesis arising from a confusion between a pidgin as a product on the one hand, and the process of pidginization on the other, he, therefore, revises and improves upon his model by dropping creolization and adding decreolization. His reasons for leaving creolization out of his model are clearly stated:

"The complication and expansion that takes place in creolization is not goal directed [ ... ] the linguistic features that a creole develops during the process of expansion and complication are not derived from any target language which serves as a model of approximation [ ....SLA ] begins with a pidginized stage where the target language is reduced and simplified due

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3. Integrative function is necessary to sound like a member of the language group to whom the individual belongs (e.g. inversion of questions). The third function, expressive, is identified when the speaker displays linguistic skill such that he becomes an admired member of the community (e.g. storytellers, poets etc.).



to cognitive constraints. Under conditions of restricted contact between the second language learner and the target language group this pidginized stage persists [...] if the learner acculturates (i.e., socially and psychologically integrates with the target language group), his pidginized interlanguage will complicate and expand in the direction of the target language norm. Therefore, since creolization is language creation and SLA is language acculturation, the former cannot serve as a model for the latter". (Schumann, 1978b: 9-10).

Bickerton (1975) and Stauble's (1978) works suggest that the analogy between decreolization and SLA is valid, since in both cases linguistic development is accomplished through the process of replacement and restructuring, both of which are in turn fostered by acculturation to the TL group. Decreolization, unlike creolization, is a type of goal-oriented SLA, therefore, the role originally played by creolization in Schumann's model for SLA is now taken over by decreolization (Refer to Figure 3.2. below).

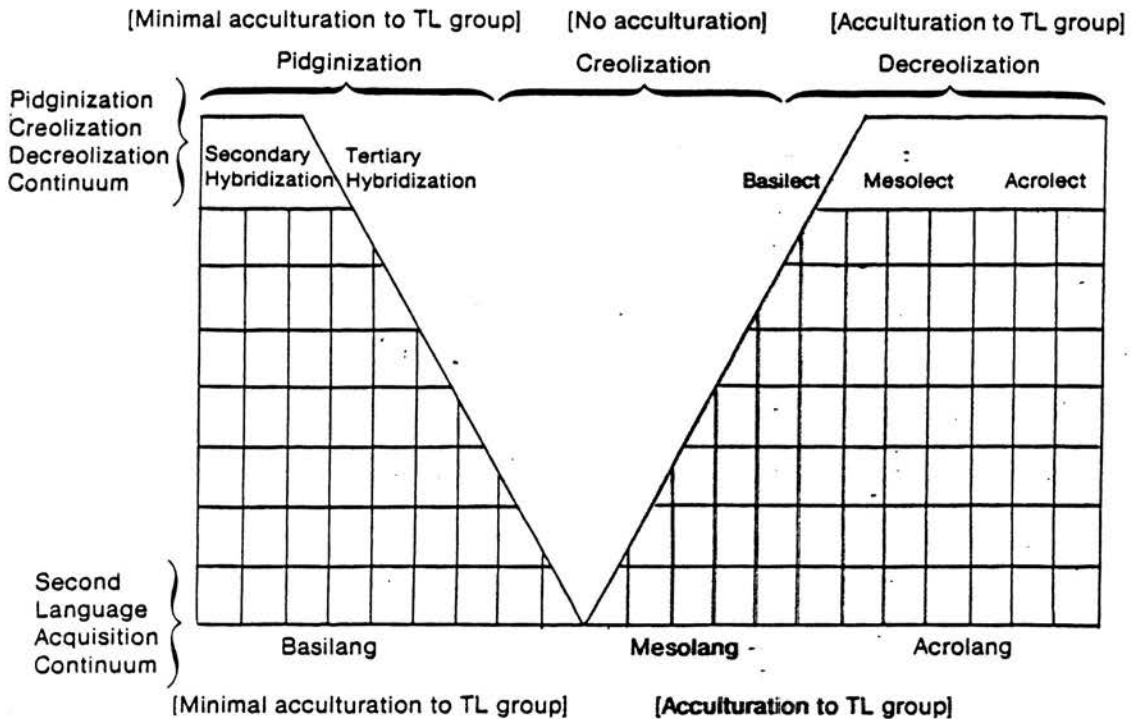


Figure 3.2. Schumann's Pidginization Model of SLA

(From Schumann 1978a: 45)

Schumann's emphasis on the relationship between the form and the function of learner's language is an important contribution to SLA research. The importance of function rather than form is salient in language in contact (i.e., natural environment) when there is a "real need" for communication (e.g. to ask for food, shelter, direction etc.). Thus, one finds a lot of 'communicative' learning programmes, where the contact is the most important factor. (For further discussion on pidginization and creolization as language acquisition, see Andersen (ed.), 1983).

Although, however, Schumann's pidginization hypothesis may be more appealing since early SLA is a pidgin-like system, the problem is with the cognitive process in pidginization. This suggests that the learner is actively pidginizing or simplifying his SL grammar from the grammar of the full-formed language. Quite simply, this is not true since learners cannot simplify what they do not possess (Corder, 1981a: 110). As Corder (1981b: 105) puts it "the process of second language acquisition is not one of simplification, but one of elaboration; not one of 'pidginization' but one of 'depidginization' ". The depidginization process is the differing functional conditions under which a pidgin develops into a creole, and the parallel that this process has with the case of second language learner.

Secondly, the strong unidirectional causal relationship which Schumann claims between function (use) and form (usage) makes his model somehow extreme. "It seems more satisfactory to view the relationship as being circular as opposed to unidirectional" (Borland, 1984: 32). For instance, a learner with a restricted grammar cannot express a various range of functions (uses), even if he/she wishes to do so. Conversely, unless the learner is in need of communication, he or she has no reason to complexify the language. However, which of these two factors is pre-eminent is extremely hard to be precisely determined.

Thirdly, Flick and Gilbert (1976) [Cited by Andersen, 1980: 67] uses Whinnom's (1971) distinction between primary, secondary and

tertiary hybridization<sup>4</sup> to support their contention that the pidginization hypothesis is not valid, since only tertiary hybridization will result in a true pidgin. Schumann, however, argues that:

"Tertiary hybridization is really secondary hybridization with two added conditions: (1) the target language is no longer available as a norm to which the speakers assimilate; (2) the hybrid becomes a vehicle of communication among speakers with different native languages" (Schumann, 1978b: 2).

Finally, the pidginization-creolization-decreolization continuum (Figure 3.2.) represents socio-historical stages in the pidgin-creole life cycle (De Camp 1971b, 1977). The pidginization part of this cycle may represent one or more generations of speakers and include both secondary and tertiary hybridization. The creolization part of the life cycle begins as soon as the pidgin is acquired by native speakers and continues until changes in the social structure of the creole society bring about decreolization. At least three generations would be required to have a full pidgin-creole-post-creole cycle. The SLA continuum, however, represents real or potential stages in a given individual. SL learners could progress through the entire continuum or stop in their development at any point between the basilect and the acrolect (Figure 3.2.). Andersen (1980), therefore, asserts that "It is not plausible to have pidginization in some way fade into decreolization in the same way that early SLA gradually develops toward the target language" (p. 68).

#### 3.1.5. The Interlanguage (IL) Hypothesis

The term IL (coined by Selinker, 1972) is becoming established in the current literature on the subject, possibly because it is neutral as to the directionality. The other terms, e.g. Approx-

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4. These terms are borrowed from biology and adapted to linguistic phenomena by Whinnom (1971). Primary hybridization is the breaking up of a language into dialects due to the acceptance of innovations from outside. Secondary hybridization is equivalent to SLA. Tertiary hybridization is essentially SLA under conditions where access to the TL is cut off, and where the SL learners speak a number of diverse NLs and use the SL for communication among themselves.

imative Systems (Nemser, 1971); Idiosyncratic Dialects (Corder, 1971) imply a TL-centred perspective. The term is also appropriate for the following reasons: (i) it captures the status of the learner's system in which the TL has not been fully mastered; (ii) it represents the instability of the learner's language system; lastly, (iii) the use of 'language' indicates the rule-governed, systematic nature of the learner's performance (which is shown by the systematicity of errors), and its adequacy as a functional communicative system (at least from the learner's point of view).

The assumption of the IL concept is that despite apparent arbitrariness, the learner's language is structurally organized and coherent and worthy to be studied in its own right. The learners' performance data show systematic errors which reveal the linguistic rules the learner is using at different stages of his or her language development.

#### 3.1.5.1. IL as a Restructuring System

Selinker (1972), defined IL as "a separate linguistic system based on the observable output which results from a learner's attempted production of a target language norm" (p. 35). He regarded the process of SLA as a process of gradual replacement of NL features by those of the TL to form the learner's linguistic system. Selinker's Model (Figure 3.3.) conceives of IL as stretching from the NL to the TL, and successful SL learning involves to a large extent "the reorganization of linguistic material from an Interlanguage to identify with a particular target language" (Selinker, 1972: 44). This same view is expressed in his earlier paper (1969), where he specifically states that the starting point for the learner is the NL. Thus, Selinker's Model clearly perceives the learner's language as being in the middle stage between the NL and the TL (refer to Figure 3.3.).

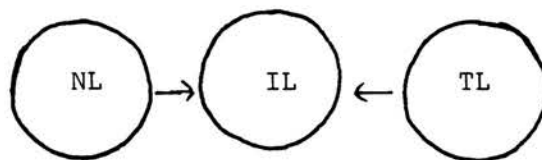


Figure 3.3.

Selinker's Model of IL in Relation to the NL and TL

Where: N = Native; T = Target; I = Inter-; L = Language

Selinker, then, proposed a theoretical framework to account for IL phenomenon in SL learning. According to him, the most crucial fact that any description of IL must account for is the fossilization phenomenon.<sup>5</sup> Fossilizable linguistic phenomena:

"are linguistic items, rules and subsystems which speakers of a particular NL will tend to keep in their IL relative to a particular TL, no matter what the age of the learner or amount of explanation and instruction he receives in the TL" (Selinker 1972: 36).

In order to account for this phenomenon, he posits the existence of a genetically determined "latent psychological structure" which is not different from Lenneberg's (1967) "latent language structure" (Section 2.1.). LPS is activated whenever learners:

"attempt to produce a sentence in the second language; that is whenever they attempt to express meanings, which they may already have, in a language which they are in the process of learning".

Moreover:

"there is no genetic timetable, there is no direct counterpart to any grammatical concept such as 'universal grammar', there is no guarantee that the latent structure will be activated at all [ ... ] and there is every possibility that an overlapping exists between this latent language acquisition structure and other intellectual structures" (Selinker, 1972: 33).

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5. There are many theories which have been advanced to explain fossilization (mainly phonological fossilization) from neurophysiological (e.g. Scovel 1969, Selinker and Lamendalla 1979), to general developmental (e.g. Oyama, 1976) to socio-cultural (e.g. Schumann 1976, Brown, 1980). (For a review see Acton, 1984).

This LPS contains 5 central processes: language transfer, transfer of training; strategies of SL learning; strategies of SL communication; overgeneralization of target linguistic material and a few minor processes (e.g. spelling, pronunciation and so forth).

Selinker, Swain and Dumas, (1975) extending the IL hypothesis to children, propose four 'observables' which underlie the IL hypothesis. These observables are:

- 1) The mutual intelligibility that appears to exist among speakers of the same IL.
- 2) The stability over time of certain errors and other surface forms in learner-language system.
- 3) The phenomenon of backsliding or the regular reappearance in bilingual speech of fossilized errors that were thought to be eradicated.
- 4) The systematicity of the ILs at one particular in time.

To go back to Selinker's main argument of his IL hypothesis - that is IL is seen as a restructuring system, the problem with his concept is that language transfer is taken for granted, since the NL is the starting point for SLA. Furthermore, Selinker does not seem to recognize qualitative changes in IL over time. Since he views SL learning as a process of restructuring and accumulation with a sequence of well-defined stages of equal complexity, stretching from the NL to the TL. He ignores the growing complexity of learner's IL which from the empirical researchers point of view is one of its most salient features (provided the learner is progressing). It could be very well that his concentration on "fossilized" structures and learners whose learning appears to have stabilized at a particular level, as well as his emphasis on "language transfer" are responsible for unchanging complexity of IL as a restructuring system proposed by him.

#### 3.1.5.2. IL as A Developmental Continuum

##### 3.1.5.2.1. Corder's Theoretical Hypothesis

Corder (1977b: 88), pointed out the inadequacy of a restructuring continuum, because as long as the concept of an IL continuum

was one of restructuring alone, it was "bound to remain of relatively little value or generality since it could only be seen as movement between fully complex code and another". The notion of progressive complexity, however, was recognized at a somewhat later date, because as Corder (op. cit) puts it researchers:

"were all concerned to describe and explain 'errors' of second language learners and to investigate through them the processes or strategies of second language learning which they thought of as a process of restructuring and accumulation",

neither of which implies an increase in complexity.

Thus, Corder (1978a), proposes that IL of individual learners through time (evidence from longitudinal studies) or a group of learners at different stages in learning (evidence from cross-sectional studies) form a "developmental continuum toward a mature second language form will, on balance, comprise developmental structure of increasing complexity". This 'recreative' or developmental continuum model is based on the hypothesis of his (1967) 'built-in syllabus' or learner's generated sequence. Corder, (1977b, 1978a) also makes a distinction in complexity between two basic hypotheses of linguistic continua: lectal and developmental (Figure 3.4.A.).

#### Degree of Complexity

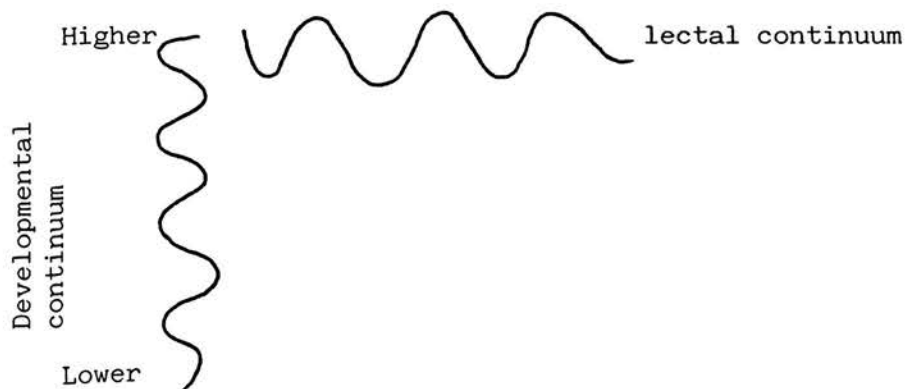


Figure 3.4.A

(Adapted from Hyltenstam, 1978a)



The lectal continuum is exemplified by Selinker's hypothesis of SLA, which is a 'restructuring continuum of equal complexity', (i.e. non-developmental continuum). The learner is seen as engaged in a process of progressively adjusting his mother tongue system even more closely to the target (Corder, 1977b). Corder (ibid) asserts that a non-developmental continuum of equal complexity is possible only in context of non-learning. For instance, the post-creole continuum, dialectal chains, socio-lectal continuum, which are described in terms of 'distance' or degree of restructuring from some standard or norm. Variability in such non-developmental continua is across the scale of complexity, (i.e. horizontal variability).

On the other hand, developmental continua (e.g. learner's language continuum, pre- and post-pidgin continua) are recognized by the increasing complexity in the direction of the norm or the TL. These developmental continua are described in terms of some degree of relative simplicity in relation to TL (Figure 3.4B).

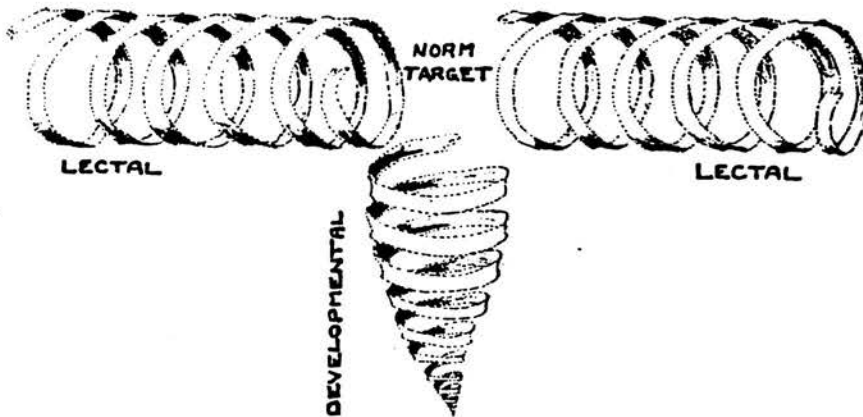


Figure 3.4B: 2 Types of Continua Differentiated by Corder

Corder, also explains our ability to interpret infant utterances in context without too much difficulty and the ability of speakers of a fully complex form of a language to move down the scale of complexity when using simplified registers such as teacher talk, baby talk, foreigner talk, etc.

### 3.1.5.2.2. Hyltenstam Empirical Framework

In adapting Corder's 'recreative' hypothesis of IL, Hyltenstam (1978a, 1978b) suggests that the developmental continuum model can be used to account for first as well as SL learning, since both situations show similarities in the degree of structural complexity increases over time. Hyltenstam, however, declares that the two (L1 and IL continua) are differentiated by the effect of NL on the IL continuum. The relationship between the first language continuum and that of IL is presented below (Figure 3.5.).

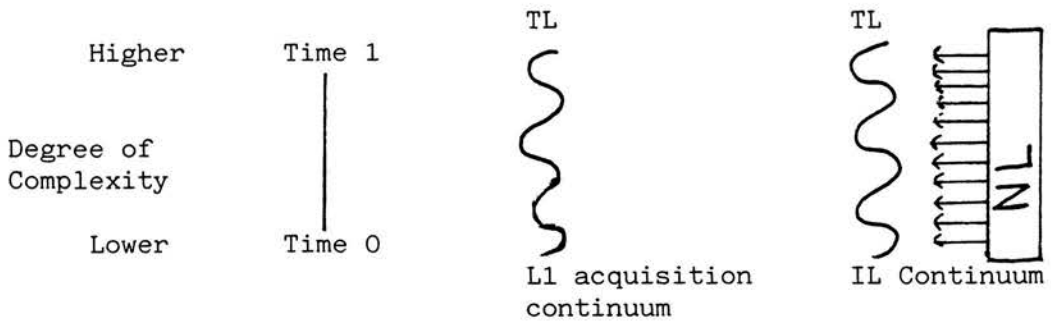


Figure 3.5.

(Source: Hyltenstam, 1978a: 73)

The figure shows that, according to Hyltenstam, the starting point for first and SL acquisition is the same. Some SLA researchers, for example, Felix, (1978) would not agree with this view.

Hyltenstam (op. cit.) presents a framework for the study of IL continuum. He argues that development towards the TL can be investigated and explained within the framework of linguistic theory of markedness. To cite him:

"Such a theory would be of value both for the definition of the initial simple structures produced by the language learner and for a specification of the differences between these structures and those structures produced as a result of interference" (Hyltenstam, 1978a: 82).

He then hypothesizes that the initial stages of IL are characterized by unmarked categories and also the development towards a given TL is achieved from unmarked to marked categories (Hyltenstam, *ibid*: 75). The theory of markedness will be discussed in Section(3.3.6.).

### 3.1.5.3. Evaluation of IL Hypothesis

Corder's (1967, 1977b, 1978a) alternative proposal of IL as a 'recreative' rather than a 'restructuring' process is more acceptable for the following reasons:

(i) Corder's hypothesis is based on cognitive theory and it suggests that all learners irrespective of their NLs may well show similarities in their ILs. Empirical support for this view is provided in many various studies discussed in Sections 2.2.2.2. and 2.2.2.3.

(ii) Viewing IL as "a dynamic goal-oriented language system of increasing complexity", in which relatively little evidence of NL influence was shown, indicates a universal language learning mechanism in acquiring an SL. This view sees the learner as actively engaged in the language process, starting with communicative needs in understanding and producing meaningful utterances (Corder, 1977b: 91). To a certain extent, this view is supported by the findings in the natural order and developmental sequence studies. Moreover, IL, a developmental continuum, is seen as sharing a number of common properties, for example, the starting point of all developmental continua is a basic simple grammar which seems to be based on either: (1) language neutral (probably a universal feature), what Traugott (1973, 1977) calls a "natural semantax", to which learners and native speakers appear to have access. This has been well established by the study of the origins of simple codes (e.g. pidgins: Hymes, 1971c) and the beginning of first language acquisition (e.g. Brown, 1973). It is also consistent with the more general ideas of innate hypothesis (Chomsky, 1959, 1965) as well as the hypothesis of linguistic universals (Lyons, 1973). Or (2) pragmatic structure (Givon 1979a and b), in which semantic categories and relations are overtly expressed. According to Givon, the linguistic coding devices of word order, intonation and morphology contribute differently to the marking of functional domains (e.g. temporality, topic continuity) of language.

(iii) Corder's (1977a) identification of the early stages of IL with simple codes, (e.g. Baby Talk, Foreigner Talk), which are somehow 'nearer' to the "underlying structures of the 'inner form' of all languages, i.e. more overtly reflect semantic categories and relations" (p. 82), indicates the important role of semantics as the basis of language development. Language learning is essentially a discovery procedure, similar to that of the child learning his first language. Thus, the learner uses his initial hypothesis, not the complex system of his NL, but a basic system which is available for all language-learners. Along the continuum of complexity, the learner moves up and down, testing his or her hypotheses about the TL. Whether L1 or any other language(s) (e.g. L2, L3 ... Ln), the learner learning a language in a natural context (e.g. language in contact), seeks meaning through analysis of what perceptually is most important in the data of the TL, i.e., lexical items and word order, (Hymes, 1971a). Since lexical items and word order are basic to communicative needs (e.g. to communicate a message or a meaning), they have optimum utility. Then, this basic linguistic code develops into a series of more complex systems, till it equates the TL norm, if fossilization does not take place.

(iv) Proponents of IL hypothesis believe that the data they offer, support universal language processing strategies. According to Tarone et al. (1976a), IL productions have the following characteristics: (a) SL speakers rarely conform to what one expects native speakers of the TL to produce (b) IL productions are not an exact translation of NL utterances (c) utterances in the SL are not randomly produced (d) ILs are spoken either by adults or by children when SLA is not simultaneous with that of the first language. Thus, Wode (1977, 1978, 1979, 1981 and 1984) has set himself the task of investigating and comparing various types of language acquisition, (e.g. naturalistic SLA vs. non-naturalistic SLA; first language acquisition vs. SLA and so forth), in an attempt to develop a comprehensive definition of IL which would include both first and SL acquisition, as well as other examples of

learner-language, i.e. an integrated or a universal theory of language acquisition. As he puts it:

"Man's capacity for language acquisition is apparently, not sharply compartmentalized, i.e., one for L1 another for L2 and so on. Consequently, insights into one type remain fairly unrevealing unless viewed within the context of other types" (Wode, 1979: 228).

(v) Although Corder considers SLA as a basically developmental process yielding in the individual continuum irrespective to the NL, he does not entirely deny the restructuring aspect in SLA, particularly on the phonological level. It is clear that SLA is different from native language acquisition (NLA), simply because of the presence of NL, in addition to other non-linguistic factors like age, motivation etc. (Section 2.2.2.6.). Corder, therefore, reconsidered the 'restructuring' and the 'recreative' hypotheses of IL in his proposal that in any particular individual, learning an SL "is probably a mixture in varying proportions of restructuring and recreating" (1977a: 93). The evidence for restructuring is the occurrence of "transfer errors", while the evidence for recreation is the absence of such errors and the appearance of "developmental errors" (Sections 2.2.2.1.1.; 2.2.2.1.3.).

(vi) Corder's 'recreative' hypothesis of IL is more appealing than that of Selinker's 'restructuring', because of the fact that it is developmental. It is logical to hypothesize a developmental continuum, since learning theories and developmental psychology have shown that there are stages of development as learning progress over time. In this connection, Corder (1977a), argues for the position of "some rather general process of 'complication'; i.e., language learning". These complication rules are language specific, possibly the addition of function words, morphology, inversion, deletion and such other transformational rules, if the TL requires this. The complication or learning process also involves the replacement of general rules by more specific ones, undifferentiated by more differentiated categories. The motivation for complication arises out of the increased communicative needs

and the necessity to reduce ambiguity. Thus, the developmental continuum is an increasing complexity as the learner complexifies and expands his basic linguistic system. The notion is supported by the fact that every speaker is able to regress to simple codes, such as motherese, foreigner talk, etc.

The notion of developmental continuum of increasing complexity is applicable to the following developmental continua: Pidgin to Creole, Child Language to Adult Language, as well as IL to TL, in that they consist of "a series of linked and sequent changes" (Bickerton, 1975: 167). In all these cases the changes from simple to more complex linguistic systems are towards a TL norm, therefore, developmental systems also involves goal-oriented change. The concept of IL as a developmental continuum is supported by empirical research like Hyltenstam (1978a), (refer to Section 3.1.5.2.2.).

(vii) The concept of variability in IL is partly explained by the notion of IL as a developmental continuum, increasing in complexity over time as learning progresses. Variability or linguistic heterogeneity is a common and an important characteristic of language acquisition. As Corder, (1973) points out the fact that:

"his [the learner's] language is changing all the time, that his rules are constantly undergoing revision is, of course, true and merely complicates the problem of description, but does not invalidate the concept of a 'learner's language'" (p. 36).

Evidence of variation can be found in data from both groups of speakers and individual speakers. The study of variation in a systematic way was ruled out of linguistics by the methodological assumption of "the ideal speaker-listener in a complete homogeneous speech community" (Chomsky, 1965: 3) - an assumption shared by both pre-generative structuralists and generativists alike.

Thus, Labov (1971) distinguishes between systematic variability and unsystematic variability in language. Systematic variability is that variability which can be predicted by rules. On the



other hand, unsystematic variability is that variability which is idiosyncratic and cannot be predicted by rules. Bailey (1974), makes a distinction similar to Labov's when he discusses patterned as opposed to unpatterned variability.

Corder, (1977b) believes that the IL speaker, like the native speaker, has more than one code available to him. Each IL which the learner forms, contains alternative rules for performing the same function. On some occasions, one rule is used, on another a different rule. In addition, the learner's IL is naturally in a constant stage of flux and this results in variable performances. This dynamic quality of IL is reflected in tremendous variability in the learner's language and also in overlapping stages of development as one set of variables is revised in favour of another. Thus, variable performances by a learner at any particular time is possible because he has a range of options (i.e. horizontal and synchronic variability), and he can shift along the IL continuum of complexity, (i.e. vertical and diachronic variability).

Variability phenomenon is evident in both: horizontal and vertical dimensions (e.g. Dickerson, 1975; Huebner, 1979). The reasons for variability are: (1) the co-existence of multiple hypotheses that the learner makes use of in his search for the TL system (Corder 1976: 75); (2) The Mode of the linguistic task, whether written or spoken, and the Type of task whether recognition, multiple choice or production which is more demanding (Corder 1977b; Bickerton, 1975); lastly (3) the presence of more than one model of the SL.

Ellis (1984a) discussed two major types of variability that have been identified and described in IL, namely, situational variability and contextual variability. The former "consists of alternation of two or more linguistic forms in accordance with extralinguistic factors" (p.2.). Brown and Fraser (1979) group the "extra-linguistic factors" into two sets according to scene (e.g. setting, type of activity, subject matter), and



participants, which covers factors relating to the individual characteristics of language users; (i.e. age, sex, ethnicity), and the interpersonal role relationship (Section 2.2.2.6.). The second type (i.e. contextual variability) is evident when the language user varies his use of linguistic forms according to the linguistic environment. Dickerson (1975), for example, found that the phonetic quality of specific phonemes produced by Japanese learners of English, varied according to the phonetic environment. Contextual variability is also supported by studies that use different tasks to investigate learner's IL. (The notion of variability is further discussed in Section (3.3.) when discussing some of the models that have been developed to account for variation phenomenon).

To conclude this Section, Corder's 'recreative' concept of IL is more comprehensive mainly in providing for an account of the starting point of learner's IL, its continuous and dynamic nature (i.e. a developmental continuum) which can be seen in its variability. Also, meaning, semantics and communication are given an important centre place. As Macnamara (1973) argues, SL learners, like young children, use context as a cue to language learning, rather than language as a cue to context. Finally, it is consistent with prevalent theories of learning and sociolinguistic studies, in particular the variability concept, as well as psycholinguistic theories.

### 3.2. MODELS OF THE NATURE OF SL LEARNER'S COMPETENCE

In an attempt to account for the IL paradoxical systematicity in variability phenomenon, and in particular for the learner's variability, researchers distinguish between various types of linguistic knowledge. This distinction is thought to be necessary in order to accommodate cognitively mature SL learners, most of whom have been exposed to some formal teaching (Lawler and Selinker, 1971). Models of the nature of SL learner's competence attempt to answer basic questions that are asked:

- a) What is the relationship between knowing and using linguistic forms?
- b) Why do learners differ in their use of language in a particular task?
- c) Why does a learner perform variably in different tasks?

Thus, the Dual Competence Models (Bialystok's, 1978: Krashen's, 1976, 1977, 1978, 1981) addressing the problem of variability from a psycholinguistic viewpoint, have been put forward. Alternatively, Tarone's (1983) Capability Continuum Model addresses the same problem; yet her model of linguistic variability is derived from sociolinguistic principles. Rod Ellis (1985) developed a theory of SLA - The Variable Competence Model - to account for the inherent variability of language learner.

### 3.2.1. Krashen's Monitor Model

Stephen Krashen's Monitor Theory is probably the most ambitious and most influential attempt to "conduct an overall theory of SLA" in recent years. It is a theory that arises from the MOA studies and was originally formulated as an account of adult SL performance, but now extends to child SL learners. Thus, Dulay et al. (1982: 7-8) assert that "language acquisition is now known to be an interaction between the child's innate mental structure and the language environment, a 'creative construction' process".

Krashen presents five main hypotheses that "make up", he claims, a "coherent theory of second language acquisition" (1982: 2). Below, the hypotheses are presented and examined one by one, to look at the evidence and argumentation that Krashen offers in support of them; and also to evaluate the Monitor Model.

### 3.2.1.1. The Acquisition/Learning Hypothesis

Krashen has been developing his Monitor theory in which he hypothesizes that the two systems for 'internalizing' the rules of a TL, the acquired and the learned (in his terms acquisition and learning) systems are completely independent. Thus, the Acquisition/Learning Hypotheses "states that adults have two distinct and independent ways of developing competence in a second language" (Krashen 1982: 10). Acquisition, on the one hand, is a 'sub-conscious' process where learners internalize the TL rules. Evidently 'acquisition' is to be identified with Chomsky's LAD, although Krashen is not very clear on this: 'acquisition' is "a process similar, if not identical, to the way children develop ability in their first language" (Krashen, op. cit.).

According to Krashen (1981) "subconscious acquisition appears to be far more important" (p.1.). The importance of acquisition lies in the claim that it is the learner's own internalization of rules from the input data in meaningful interactions in natural communication settings. In such situations, the speakers are not concerned with the form of their utterances, but with the content. Further, explicit learning of rules through error correction is not necessary for language acquisition to take place. Acquisition, therefore, is the result of the learner's sub-conscious interaction with the linguistic data, guided by universal and innate mechanisms. It is responsible for the generation of an infinite number of learner's governed systematic rules. It is, also, hypothesized that language acquisition proceeds along fairly predictable stages which are common to all acquirers.

Learning, on the other hand, refers to "conscious knowledge of a second language, knowing the rules, being aware of them, and being able to talk about them" (Krashen, 1982: 10). it is a con-

scious process for developing SL ability, which cannot initiate utterances and is available only for the purpose of editing (i.e. monitoring); hence, its peripheral role. This conscious process of rule internalization can be helped along by presentation of rules. Also, error correction is an important part of the learning component. Learning evolves in the climate of explicit formal tutelage, learning of pedagogical grammar rules, error correction and classroom exercises. The conditions of its use and the type of learners who use the Monitor are very limited. When used, at the most it can improve the accuracy only of low-level morphological and grammatical forms.

Krashen related the Acquisition/Learning distinction to the user's attitude and aptitude. By so doing he argued that the acquisition/learning hypothesis helps to interpret studies of SL aptitude and attitude in:

"providing a parsimonious explanation for what had appeared to be a strange finding: both language aptitude (as measured by standard test), and attitude (affective variables) appear to be related to second language achievement, but are not related to each other" (Krashen, 1981: 19).

Therefore, attitude is claimed to be directly related to acquisition and only indirectly to conscious learning. Positive attitude, to the TL and/or its native speakers makes the acquirer open to input data and activates the language learning mechanisms. (See also Section 2.2.2.6.2.).

Aptitude is more closely linked to conscious learning. According to Carroll (1973), there are 3 major components of modern aptitude tests: (i) 'grammatical sensitivity' which is defined as "the individual's ability to demonstrate his awareness of the syntactical patterning of sentences in a language" (p. 7.); (ii) Phonetic Coding ability: the ability to store new language sounds in memory; and finally, (iii) inductive ability where the goal (as claimed by Krashen) is the discovery of an explicit, abstract (set of) rule(s) by means of a problem-solving approach. Pimsleur's (1966) identification of the components of language aptitude is quite similar to, but not identical with, Carroll's:

"The first is verbal intelligence, by which is meant both familiarity with words [ ... ] and the ability to reason analytically about verbal materials [ ... ]. The second component is motivation to learn the language [ ... ]. The third component [ ... ] is called 'auditory ability'." [emphasis added] , (Pimsleur, *ibid.*: 182).

Krashen's conclusion is that "inductive ability and grammatical sensitivity, and [ ... ] verbal intelligence are hypothesized to relate directly to, or reflect, conscious language learning, the Monitor" (Krashen, 1981: 21).

Krashen's Monitor model downgrades the importance of language aptitude. This is consistent with Gardner's (1979) view, who certainly accepts that aptitude is important; but only with the qualification that this is so for formal language learning and that it is constrained by social milieu and acquisition context factors. Schumann (1978a), also, posits the main causative influence on acquisition to be acculturation, with aptitude only being one of a large range of other factors that have minor relevance.

### 3.2.1.2. The Monitor Hypothesis

The fundamental claim of the Monitor Model is that conscious learning is available to the learner only to edit - or to use Krashen's term "monitor" - the output of the acquired system before or after the utterance is produced (Krashen, 1982: 15). Further, the Monitor, cannot be used unless the following three necessary but not sufficient conditions are met: (1) Time ("In order to think about and use conscious rules effectively, a second language performer needs to have sufficient time"); (2) Focus on Form ("The performer must also be focussed on form, or thinking about correctness"); and (3) Knowledge of the rule (Krashen, *ibid.*: 16). In addition, the use of formal learning is dependent on other factors such as the learner's age (Krashen *et al.* 1979) and personality (Krashen, 1981, 1982). Thus, there are individual variations in the amount of the monitoring. Figure 3.6. illustrates Krashen's Monitor Model of SL performance.



Figure 3.6.

(Source: Krashen and Terrell, 1983: 30)

Krashen (1981: 12-18) discusses at length studies of Monitor users and sorts of individual variation in using the Monitor.

The table below summarizes his discussion:

Table 3.1. Individual Variation in Monitor Use

<u>Monitor Users</u>	<u>Spoken Style</u>	<u>Uses Conscious Rules?</u>	<u>Personality Type</u>
Optimal	- Hesitant	Yes	
Overuser	+ Hesitant	Yes	Self-conscious
Underuser	- Hesitant	No	Outgoing

(Adapted from Krashen 1981: 18)

The Monitor overusers know many of the rules of the TL, but are often unable to communicate in speech. Stafford and Covitt (1978) present a monitor overuser case. A Finnish speaker who generally does not trust her intuitions about the TL (in this case English) syntax but relies on conscious rules. The monitor overuser, then, refers to his conscious grammar all the time, when using his SL. This may be due to an overconcern with correctness.

At the other extreme are SL performers who do not seem to use a monitor to any extent, even when conditions encourage it. Such performers, like first language acquirers, appear to be uninfluenced by most error correction and do not usually utilize conscious linguistic knowledge in SL performance. The monitor underuser does not seem to use the conscious grammar at all. The

underuser typically judges grammaticality 'by feel', that is he/she uses the subconsciously acquired system rather than a conscious grammar. The Monitor underusers "may pay lip service to the importance of linguistic rules but in reality may hardly use them at all" (Krashen 1981: 17). The optimal Monitor users, successfully edit their SL output in such a way that it does not interfere with communication. As Table 3.1. shows the difference between the Optimal Monitor users and the Monitor underusers is the use of conscious rules.

### 3.2.1.3. The Input Hypothesis

Krashen summarizes this hypothesis as follows:

"a necessary (but not sufficient) condition to move from stage 'i' [where i represents current competence] to stage 'i + 1' [the next stage immediately following 'i' along some natural order], is that the acquirer understand input that contains 'i + 1', where 'understand' means that the acquirer is focussed on the meaning and not the form of the message." (1982: 21).

According to him: (1) the input hypothesis relates to acquisition not learning; (2) learners acquire by understanding language that contains structure a bit beyond their current level of competence (i + 1). This is done with the help of context or extralinguistic information;<sup>6</sup> (3) when communication is successful, (i.e. the input is understood and there is enough of it), i + 1 will be provided automatically; finally (4) production ability emerges. It is not taught directly. "Speaking fluency is thus not 'taught' directly, rather speaking ability 'emerges' after the acquirer has built up competence through comprehending input" (Krashen and Terrell, 1983: 32).

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6. White (forthcoming) argues that "by concentrating on meaning and context, he [Krashen] misses the fact that certain aspects of grammar development in the learner are largely internally driven and independent of context and meaning" (p. 2).



Krashen (1976) hypothesizes that formal and informal input contribute to different aspects of SL competence: informal as conducive to acquisition, while formal has the potential for both acquisition and learning. Again, he puts forward the case that the Acquisition/Learning distinction helps to solve a puzzle in SLA research; namely contradictory reports about the effectiveness of informal or formal learning. Krashen (1981) discusses several types of linguistic environments (inputs) under two hypotheses. First, the informal environment can be efficiently utilized by the adult language learner. This hypothesis is supported only if input environments are again sub-divided into 'intake-type' and 'exposure-type' (p. 47).

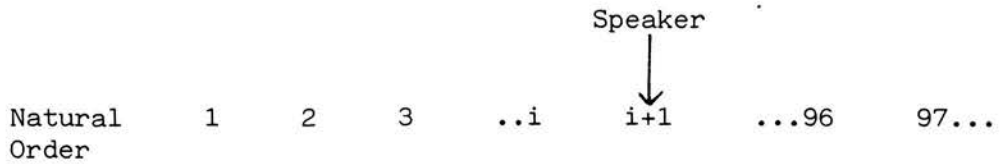
The intake-type environment provides true input to the LAD (Krashen, 1981). Such type of exposure can be in the classroom when SL is used as a medium of instruction or outside the classroom when SL is used as a language of communication (Section 2.2.2.5.1.). It would seem that the context is not important, but rather the way SL is used. Intake-type use indicates active meaningful use of language which encourages acquisition. Exposure-type, on the other hand, does not always lead to acquisition. The ineffectiveness of exposure-type environments is confirmed by the lack of relationship between reports of time spent in the country where the TL was spoken and the results of an 'acquisition' proficiency test. Especially when language is not directed to the learner, there is no learning.

The second hypothesis, is that formal study or its essential characteristics, is significantly more efficient than informal exposure in increasing SL proficiency in adults. Formal learning could be in the classroom or outside it (e.g. self-study). It is characterized by rule isolation and feedback (error-correction and/or detection) sometimes with deductive presentation of rules. Carroll (1967), Krashen and Seliger (1975) support this hypothesis. Krashen suggests that both formal and informal linguistic

inputs contribute to language acquisition:

"Both formal and informal linguistic environments contribute to second language proficiency but do so in different ways: An intensive intake informal environment can provide both the adult and child with the necessary input for the operation of the language acquisition device. The classroom can contribute in two ways: as a formal linguistic environment, providing rule isolation and feedback for the development of the monitor, and to the extent language use is emphasized, simultaneously as a source of primary, linguistic data for language acquisition" (Krashen, 1976: 167).

Related to the discussion on different linguistic environments and the difference between Input and Intake (Corder, 1967, 1971); Krashen (1982: 132) hypothesizes that the notion of Comprehensible Input and Simple Codes (e.g. teacher talk, foreigner talk), do aid SLA for adults. Two questions are to be investigated: (a) whether access to simple codes help acquirers to acquire a language faster and better; and (b) whether such codes are linguistically appropriate for optimal language acquisition. Linguistic appropriateness has to do with the notion of 'comprehensible input' (Krashen, 1982: 33) that contain  $i + 1$ , structures a bit beyond the acquirers' current level. Long (1983b), like Krashen (1982), has argued that comprehensible input is the primary causative variable of SLA. It is through interaction that the negotiated modification of input takes place in order to ensure that understanding and therefore acquisition takes place. In interaction, the focus is on meaning as opposed to form so as to enable the input to be tuned to an appropriate level to facilitate learning (Figure 3.7.).



(A) Finely-Tuned Input



(B) Roughly-Tuned Input

Figure 3.7.

(Adapted from Krashen &amp; Terrell 1983: 33)

In (A), the speaker deliberately tries to include many examples of the student's 'i + 1' in an attempt to provide optimal input that aims specifically at one structure at a time. The reason might be that the speaker needs to make sure the hearer (in this case learner) understands what is being said. In the case of roughly-tuned input (B), the speaker only attempts to make himself/herself understood. When this is accomplished, the speaker will automatically "cast a net" (Krashen and Terrell, *ibid.*) of structure around the acquirer's current level: 'i'. This net includes many instances of 'i + 1'.

In a classroom setting, however, exercises cannot always be tuned to a student's stage or competence. Further, there is a loss of motivation in the sense that if classroom exercises are too easy, students get bored, if too hard, frustration sets in. Even if they are at the right stage, it is still difficult to measure whether the input is enough for intake. Still, when all these conditions are met, individuals do vary. Krashen concluded that "the use of simple codes may have some real advantage over classroom exercises" (1982: 133). An important value of the classroom, then, rests in valuable Teacher Talk for optimal input and, hopefully output.

#### 3.2.1.4. The Natural Order Hypothesis

This hypothesis suggests that "second language acquirers acquire (not learn) grammatical structures in a predictable order" (Krashen, 1980: 169). As far as evidence goes, there is no more solid ground, there has been no end of morpheme studies, both in first and SL acquisition research, and most of the studies seem to support this hypothesis, at least as far as the morphemes studied are concerned (Section 2.2.2.2.). Houck et al's (1978) study seems to provide evidence that tasks which are focussed on communication show a natural order, while tasks which focus on form show a variant order (or 'unnatural' order) identical to that found in Larsen-Freeman's study (Section 2.2.2.2.4.1.). The researchers concluded:

"The presence of natural order has been interpreted as a manifestation of the subconscious 'acquired' system at work, with little contribution from the conscious grammar, the Monitor. [...]. Thus, the unnatural order found in Larsen-Freeman (1975) was interpreted as the result of the intrusion of the conscious grammar". (Houck et al. 1978: 335), (refer to Section 2.2.2.2.4.1.).

As for the effect of instruction on the natural order hypothesis, Ellis (1984b) asserts that "although instruction has a positive effect on rate, it has no effect on route" (p. 20). The effect of instruction on the rate of SLA is provided by Long's (1983a) review of the studies which have addressed what effect instruction has. Long (op. cit.: 374 ) concludes "there is considerable evidence to indicate that SL instruction does make a difference". On the other hand, a lot of studies reported the absence of any effect of instruction on the route or the 'natural order', (e.g. Krashen, 1977a). Learners in different settings (either formal or natural), follow the same route. The order of acquisition appears to be "impervious to context" (Allwright, 1984).

It should be pointed out, however, that there is no total agreement about universality of the 'natural order' proposed by Krashen. Lightbown's (1983) work, for example, shows that instruction can lead to a different order. Lightbown (1984) also

emphasizes that counter-factual studies (i.e., 'unnatural order') do exist. Yet, the natural order's proponents, always, come up with solutions and reasons that support their view. For instance, the evidence Lightbown (1983) produces to show that instruction affects the route of the SLA "suggests that this is only temporary" (Ellis, 1984b: 33).

#### 3.2.1.5. The Affective Filter Hypothesis

This was originally proposed by Dulay and Burt (1977), who used the term "affective delimiters"; Krashen has revised it somewhat in an attempt to incorporate the so-called 'affective variables' into his SLA theory. Krashen lists three major categories into which most of the affective variables studied can be placed: motivation, self-confidence, and anxiety (1982: 31). The affective filter hypothesis claims, first of all, that there is such a thing as an affective filter, which is "that part of the internal processing system that subconsciously screens incoming language based on [...] the learner's motives, needs, attitudes and emotional states" (Dulay, et al. 1982: 46). The hypothesis also claims that "the effect of affect is 'outside' the language acquisition device proper" (Krashen, 1982: 32).

The Affective Filter hypothesis captures the relationship between affective variables and the process of SLA by positing that acquirers vary with respect to the strength or level of their Affective Filters. Those whose attitudes are not optimal for SLA will not only tend to seek less input, but they will also have a higher or stronger Affective Filter - even if they understand the message, the input will not reach that part of the brain responsible for language acquisition or the LAD. Those with attitudes more conducive to SLA will not only seek and obtain more input, they will also have a lower or weaker filter. They will be more open to the input and it will strike "deeper" (Stevick, 1976); i.e. if the Affective Filter is low, the input will be intake.

### 3.2.1.6. Evaluation of Krashen's Model

To sum up the discussion, Krashen argues that the acquisition/learning distinction, which is the basis of his Monitor theory, provides a general non 'ad hoc' way of accounting for variety of phenomena in SL performance. The nature of errors in SL performance will depend on whether 'monitoring' is in operation.

Errors that result from performance, based on the acquired system alone, will be consistent across acquirers, regardless of NLs, as acquisition is guided by universal principles which yield natural order. On the other side, those errors that result from situations in which monitoring is possible, will be more idiosyncratic, since they will reflect each learner's conscious mental representation of linguistic regularities in the TL (Krashen, 1977).

The Monitor model has been subject to a lot of criticisms (e.g. McLaughlin, 1978; Ellis, 1982, 1983; Gregg, 1984; Takala, 1984). The point, however, is not whether it is right or wrong, but the issues it provokes, since it has generated various studies and provided researchers with a wider area of investigation. Moreover, this model though not psychologically/cognitively very clear, has close relevance to the classroom, (especially for communicative teaching), acceptance of the theory (in part or the whole), means a revision of the traditional view of teaching and methodology in classroom, rejection means otherwise. As Corder (1984a) puts it:

"There are those who believe that second language acquisition research is still at such a preliminary stage that it is premature to base any proposal for language teaching upon it yet. There are others, among whom I count myself, who believe that it is the task of the applied linguist to make practical use of whatever knowledge is available at the time. We cannot constantly be waiting to see what is round the corner. We must be prepared to stick our necks out. This is what Krashen has done, basing his proposals upon a thorough knowledge of the present state of the art in second language acquisition research, and we should be duly grateful" (Corder, 1984a: 58).

First, the basic weakness in the Monitor theory is the separation of acquisition and learning as completely "two independent systems". Krashen asserts with comparatively little evidence, that the stores of acquired and learned knowledge remain separate with no transfer from one to the other (Rivers, 1980; and Stevick, 1980: 276). It is very difficult to conceptually imagine that an IL of a learner, who has both learned formally and acquired informally, is divided into two components (which is exactly the implication of the Acquisition/Learning distinction).

For such a learner then, there are two sets of rules kept separate (possibly in different hemispheres), as the separation of the acquisition from learning, provides no passage from one to the other.

Even if the distinction between conscious (learning) and unconscious (acquisition) knowledge, or between conscious and unconscious mental process might seem by now uncontroversial, Krashen's hypothesis goes much further. Specifically, he claims that "learning does not 'turn into' acquisition" (Krashen 1982: 83). Krashen himself seems to be aware of the inconsistency and somewhat invalidity of his claim:

"The idea that we first learn a new rule, and eventually, through practice, acquire it, is widespread and may seem to some people to be intuitively obvious [...]. It was, I thought, exactly the way I learned languages myself".  
[emphasis mine] (1982: 83).

Then, it certainly does seem intuitively obvious that some rules can be acquired through 'learning'.

Second, in a lengthy argument, Krashen shows that 'learning' need not precede 'acquisition', but he does not show that it cannot. "It could well be that the reverse is true with conscious learning foreshadowing and facilitating acquisition at a later stage" (Skehan, 1980: 104). Krashen gives three arguments: (1) sometimes there is 'acquisition' without learning (e.g. performers who can use complex structures in an SL who do not know the rule consciously and never did); (2) sometimes learning never



becomes acquisition, for example, someone who knows the rule but still keeps breaking it; and (3) even the best learners master only a small subset of the rules of TL (Krashen, 1982: 84-87). These as observed by Gregg (1984) "are all true, but are not evidence that 'learning' cannot become 'acquisition'" (p. 81).

Third, the distinction, (itself), between the conscious and unconscious creates a lot of problems, let alone Krashen's failure to make clear what he means by 'conscious' and 'subconscious' (McLaughlin, 1978). To be more specific, does 'subconscious' mean 'not accessible to the conscious'? Or does it mean not conscious at a given moment? On the other side, does 'conscious' entail 'incapable of becoming unconscious' (Gregg, 1984). The realms of the conscious and unconscious applied to linguistic data is unprovable. Since there is an absence of evidence, there is no reason whatever to accept/reject Krashen's claim. Furthermore, it may be possible that what is initially learned consciously will eventually be used in a non-conscious way. Bialystok's model (Section 3.2.2.) shows the possibility of 'leakage' from the conscious to the unconscious knowledge or vice versa. Thus, as it stands, the acquisition (unconscious)/learning (conscious) hypothesis, far from being "potentially the most fruitful concept for language teachers that has come out of the linguistic science" (Stevick, 1980: 270) in recent years, is either clearly false or trivially true.

Fourth, the Monitor model gives formal knowledge a very restricted position. Conscious learning is claimed to have "only one function and that is as a Monitor or editor" (Krashen, 1982: 15). Furthermore, the Monitor cannot be used to edit the output unless the learner has time; the focus is on the form and he/she knows the rule. According to this formulation it is very difficult to use conscious learning in performance successfully. Also the Monitor model claims that learning is available only for use in production, not in comprehension. This is an issue raised by McLaughlin (1978), to which Krashen gives no answer in his reply (1979).

Fifth, Krashen's belief is that acquirers need not have a conscious meta-awareness of the 'rules' they process "and may self-correct only on the basis of a 'feel for grammaticality' " (1978: 2). However, it is difficult to determine whether a learner's performance is due to monitoring his output with learned language or whether it is already acquired. As Rivers (1980: 52) asserts "from the psychological point of view it is difficult to distinguish between self-correction by 'feel' and self-correction by 'rule' in the sense in which Krashen uses these terms".

The only criteria suggested by Krashen are the ways in which the respective language systems manifest themselves in speech, yet such factors as the need for more processing time are not convincing, since native speakers also perform differently in spoken and written tasks. Native speakers can also avoid certain performance lapses when more processing time is available. Nor can the elicitation device for discovering whether the learner is exhibiting learned or acquired knowledge be accepted. Krashen et al. (1977) administered multiple choice grammar-type tests in which learners were asked to choose a correct sentence from a group of sentences, and then indicate how they had made their judgements according to the following format:

"Why did you make this selection?

1. It feels/seems right.
2. You know and use the grammar rule" (Krashen et al. 1977: 172).

Krashen himself indicates, it is questionable whether one can rely on learners' judgements concerning these issues. Even if they are capable of making grammatical judgements (Schachter et al. 1976; Arthur, 1980; Gass, 1983), and of stating a grammatical rule when purporting to be using it, the latter does not necessarily need to be true. Stafford and Covitt (1978: 115), were able to establish many students' claims to be using grammatical rules, when they in fact use them very poorly or even invent their own.

Sixth, Ellis (1983) criticizes Krashen's conceptualization of the role of informal interaction in facilitating acquisition, (i.e. the 'i + 1' formulation), as being simplistic. He argues that "it fails to take account of the fact that interaction is dynamic, involving a negotiation of meaning between the participants" (Ellis 1983: 284). Krashen conceives of the 'input', as making available to the acquirer a structure that his LAD is ready to process. On not one occasion does he consider the possibility that the acquirer, and his or her interlocuter together, construct an utterance which later the acquirer performs alone. Hatch (1983b) argues that "the notion of 'one step ahead'" is an "appealing one although the construct i + 1 has not been operationally defined" (p. 78).

Seventh, in a review of language aptitude, Skehan (1980) criticizes the place of language aptitude in the Monitor model. He argues that even if one restricts aptitude to the formal learning situation, it is still of some significance, since such situations are the usual ones in which languages are learned in many countries. Moreover, Skehan states that Krashen's analysis of:

"inductive language learning ability is inadequate. It erroneously concludes that an inductive ability requires the student to discover an explicit, abstract set of rules. This is not so" (1980: 104).

Carroll (1973) defines this ability as:

"the ability to examine language material and from this to notice and identify patterns of correspondence and relationships involving either meaning or syntactic form". (Cited by Skehan, 1980: 100).

Skehan, therefore, asserts that an inductive language learning ability is entirely neutral in the debate on implicit or explicit rules. Further:

"no position need be taken as to whether the learner should be able to formulate the reasons for language choices, indeed it would seem more reasonable to support that he can not" (Skehan op. cit.).

It is, also, somehow ironic that the model of language acquisition that underlies Krashen's monitor model (i.e., Dulay and Burt, 1977) contains a component: the cognitive organizers,

which seem to overlap considerably with the concept of inductive language learning ability. Skehan's conclusion is that:

"aptitude for language should not be neglected simply because it does not integrate well with other components in a general learning model" (1980: 105).

Eighth, although the Monitor model, basically originates as an account for variable performance of adult SL learners, it fails to fully explain the variability phenomenon. In Krashen's model, errors are posited as unmonitored, developmental products, while TL forms are either monitored or acquired forms. Such a view constrains the possible causes of 'errors' or 'deviations' from the TL, which are the result of various learning strategies and processes. The monitored/unmonitored distinction can neither adequately account for acquired forms nor for the different types of errors observed in IL data. It also fails to account for variable performance in any other explanation than as 'acquired' or 'learned'. Furthermore, there is no attempt to integrate the role of other knowledge both linguistic and non-linguistic. A more rational and common sense view, is to conceive IL as consisting of one set of variable rules, the use of which is influenced by the demands of external variables, such as situations, tasks, and/or internal factors (e.g. personality, attitude, motivation, age). Other models like Corder's (Section 3.1.5.2.); Bialystok's (Section 3.2.2.) and Tarone's (Section 3.2.4.) are attempts to explain variability in a more comprehensive way.

William Littlewood (1984a), reviewing the Natural Approach hypothesis put forward by Krashen and Terrell (1983), concludes that:

"The Monitor Theory remains an interesting, stimulating way of looking at second language learning, but here it seems to be over-reaching itself, threatening to become the latest in a long line of theories (behaviourism, structuralism, and so on), which have claimed to provide teachers with watertight prescriptions for every situation they encounter. True, it is a 'second language acquisition theory', rather than a theory of language, but that is little consolation if it is to make claims and recommendations that go beyond what is justified by the available evidence" (Littlewood, 1984a: 218).

Even if Krashen's natural order features are accepted as critical, they still "do not constitute the major way in which classroom time is spent" (Allwright, 1984).

Finally, it should be pointed out that the acquisition-learning dichotomy does not seem to have any immediate application to the present study. There is no clear cut point between acquisition and learning and it is certainly difficult to account for the two processes separately, especially in this study in which the subjects develop their SLA of Arabic, mainly through formal teaching. Krashen's Filter, Organizer and Monitor "are metaphors or at most hypothetical constructs" (Bloor 1984: 151). In other words, Krashen's Monitor Model is a theory which is, practically speaking, impossible. Another point that is necessary to be noted is that: in the present study we do not distinguish between the learners' acquisition and learning in Krashen's technical way that is explained in his Monitor model. In fact, we use the two interchangeably.

### 3.2.2. Bialystok's Explicit and Implicit Model

Bialystok's (1978) model (Figure 3.8.) is organized on 3 levels: Input, Knowledge and Output. It outlines, therefore, the relationship between input, storage and use of linguistic information (output). The model shows that language is mentally represented in three different ways: (1) explicit knowledge which "contains all the conscious facts the learner has about the language", (i.e. metalinguistic awareness and pedagogical knowledge of linguistic rules); (2) implicit knowledge: an intuitive, informal linguistic knowledge normally automatic and unanalyzed. It denotes the general form in which people know most things without being aware of the structure of that knowledge; and (3) other knowledge refers to all other information, the learners bring to the language task (e.g. knowledge of other language(s)).

The hypothesis put forward by Bialystok is that there are fundamental differences between using language in different situations and/or for different purposes. These differences are apparent in the linguistic demands placed on the learner, i.e., the require-

ment of the tasks to be solved which may be described in terms of the knowledge required. The assumption is that if knowledge is analyzed, then it can be manipulated, unlike unanalyzed knowledge.

The first two knowledge systems (explicit and implicit) are not completely separated. Explicit knowledge may become implicit by means of the strategy of formal practising. Similarly by 'inferencing', implicit knowledge may contribute to explicit. Inferencing (coined by Carton, 1971: 45) means "attributes and contexts that are familiar, are utilized in recognizing what is not familiar". Bialystok (1979) defines the inferencing strategy as "the use of available information to derive explicit linguistic hypothesis. The inferencing could be linguistic or non-linguistic; it may be taken from the speaker or from the environment and it may relate to the structure or the meaning of the language" (Cited by Bialystok 1983: 105). (Inferencing as an SL strategy is illustrated by examples from the present data in Chapters 6 and 7). Since the two knowledge systems interact, Bialystok's model differs from Krashen's, yet "the crux of the matter is the question of how formal and informal knowledge interact" (d'Anglejan 1979: 2). Secondly, it has a broader base than the monitor model, for example, it accounts for the role of other knowledge in SL learning.

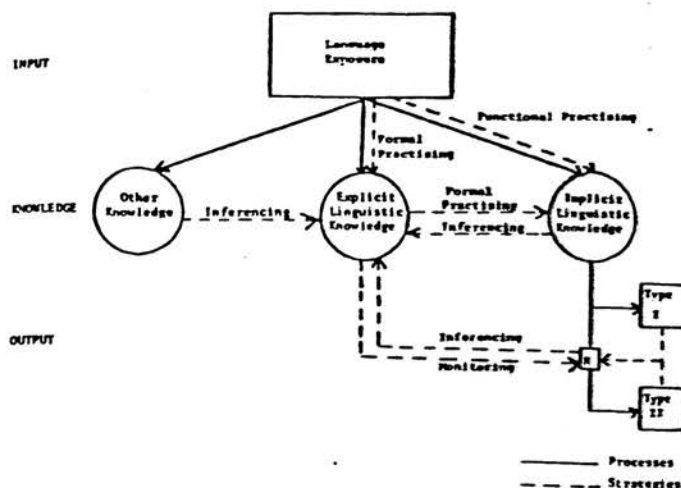


Figure 3.8. Bialystok's Model of SLA

(Source: Bialystok 1978: 71)



In order to examine the theoretical model, Bialystok (1979) studies the differential use of formal explicit knowledge and intuitive implicit knowledge of 317 English-speaking high school students learning French in an SL grammaticality judgment task. Certainly, different learning situations, e.g. a strictly traditional pedagogical approach bias the type of input, (i.e. formal explicit knowledge) and the learner may not be able to use linguistic information spontaneously and automatically. As she puts it "the results indicated that explicit knowledge intervenes for incorrect sentences requiring detailed responses" (Bialystok 1979: 81). On the other hand, exposure to native speakers' speech (i.e. informal exposure), encourages and eventually develops the actual communicative use, fluency, and the ability to infer from context (i.e., implicit linguistic knowledge).

Both Krashen and Bialystok are seeking in their models to account for individual differences in mastering an SL, as well as variability in the difficulty experienced in different SL tasks. Bialystok (1981) has argued that language proficiency must be considered in terms of complex interaction of quantitative and qualitative factors, in order to account for the variability of linguistic achievement. Thus, Bialystok (1981) relates the varying proficiency learners show on different tasks to aspects of cognitive functioning. Here, language proficiency is seen as composed of two factors. The first, the analyzed factor relates to the degree of control over linguistic information or knowledge (i.e. competence is realized as a propositional kind of knowledge, that is, knowing 'what'). This factor is responsible for the different applications of knowledge to various situations.

The second, the automatic factor, "refers to the ease with which information may be accessed by the learner, irrespective to its extent of analysis" (Bialystok 1981: 10). Therefore, it is related to relative access to linguistic information in terms of fluent and non-fluent performance (procedural knowledge, knowing 'how'). By multiplying these two factors, Ellen Bialystok presents a framework (Figure 3.9.), on which different learners and different native speakers performing various tasks, can be



plotted. Within this framework the two factors (analyzed and automatic) are not seen as separate categories; but continua. Along the analyzed dimension, there is a continuum ranging from non-analyzed knowledge (where the underlying formal constituents are not identified), to analyzed knowledge (in which the formal structure and the relationship to meaning are transparent).

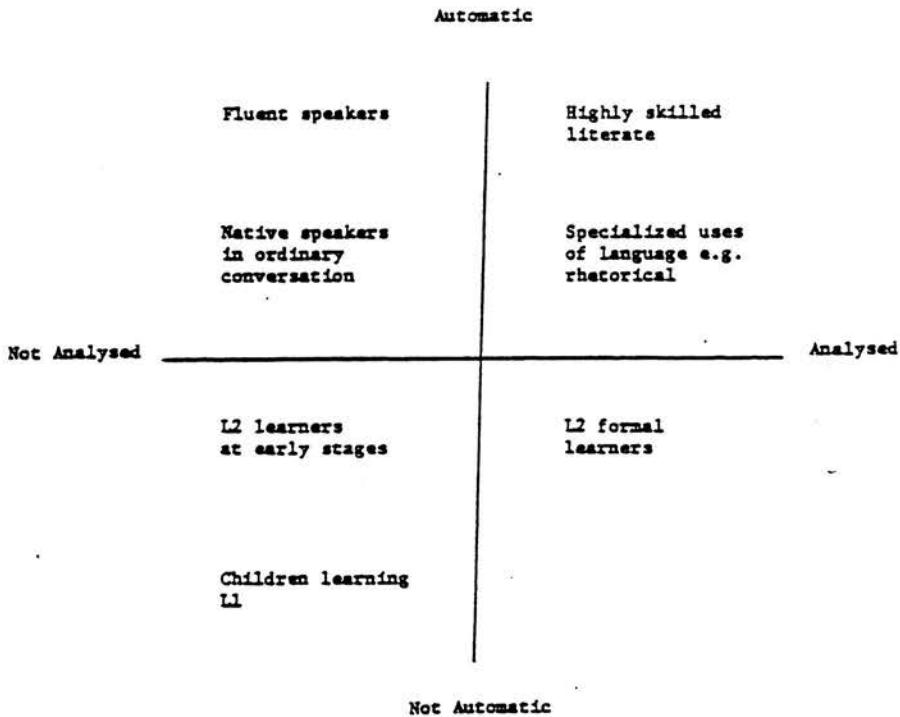


Figure 3.9. Two dimensions of language proficiency as seen by Bialystok (1981: 33)

As learners progress, they gain an increasing control of the structural properties and relations governing knowledge, therefore, they will be able to make flexible use of the structure in new contexts, to modify that structure for rhetorical purposes and so forth. Non-automatic knowledge restricts the learner in fluent use and easy access. As the learner progresses along the automatic continuum, he/she shows greater ability to retrieve information and gain easy access for speedy processing in tasks like fluent conversation and dialogue. Since development of control and access are independent, learners may be at different points of the continua yielding variable performances.

### 3.2.2.1. Evaluation of Bialystok's Model

The two factors paradigm is an attempt to propose a more psycholinguistic origin regarding variable performance than the ones offered so far. Variability has to be seen as the result of different degrees of a learner's control of, and access to linguistic information. However, whilst Bialystok is making a worthwhile psycholinguistic distinction in her model of proficiency, it seems rather doubtful how much this approach can add to the understanding of SLA. In her discussion of mental representations of language proficiency, Bialystok deals with completely abstract and not at all clearly defined concepts, which are somehow confusing. It does not seem correct, for instance, to put early SL learners, first language learners, native speakers in ordinary conversation, and fluent speakers (Figure 3.9.) on a similar level, in terms of mental representation. Borland (1984), therefore, questions Bialystok's (1981) model, since as it stands, it:

"takes no account of differences in the complexity of the linguistic knowledge. Early SL learners and native speakers differ not only in their access of linguistic information, but also in the quality and complexity of their mental representations" (p. 37).

Secondly, it is the learning situation in Bialystok's view that determines largely which factor(s) will be noticed. On the one hand, formal instruction is expected to contribute to development of the factor 'analyzed' since the presentation of rules permits the learner to represent aspects of the language explicitly. Informal exposure to the language, on the other hand, will primarily be contributed to the factor 'automatic', because practice and experience permit the learner to gain easy access to the information required. This, however, does not signify that there is a simple mapping between formal learning and the development of explicit knowledge, nor between informal learning and the development of access to the knowledge. Learning is more complex than that, it may well be that both aspects of proficiency are enhanced in any learning/exposure situation.

Similarly, formal learners are hypothesized to have an analyzed

knowledge source which is adequately developed, since their classroom experience consists of extensive structural practice. On the other hand, informal learners are expected to have their information as due to the automatic factor, rather than the factor 'analyzed'. Again, this is a rather crude division, useful as a model, yet not entirely realistic.

Ellis (1984b) investigating the role of instruction<sup>7</sup> in SLA posited that the classroom setting (i.e. what Bialystok refers to as "formal instruction"), differs from a natural setting in degree rather than kind. "Thus classrooms are more likely to stress planned discourse, although this need not necessarily be the case" (Ellis, op. cit.: 32). One might expect the classroom setting to lead to rapid learning, if learners have the opportunity to experience a various range of discourse types either in classrooms, or in a combination of classroom and natural setting.

In another paper, Bialystok (1982) uses the two factors paradigm in the last analysis to predict task difficulty in terms of control and access. For instance:

- (1) a judgement of overall grammaticality task, based on implicit knowledge is (- Analyzed - Automatic);
- (2) a multiple choice task is (+ Analyzed - Automatic);
- (3) a task which places more linguistic and cognitive demands (e.g. a debate) is marked as (+ Analyzed + Automatic), and this is more difficult than the first two.

Recently, Bialystok (1984) discusses, again, the cognitive framework for language acquisition and use. According to her, there are two cognitive skills that are presumed to underlie the acquisition and use of language in either first or SL contexts. These are: Analysis of Knowledge and Cognitive Control. The former refers to the extent to which the learner is able to represent the structure of knowledge along with its contents. Within this cognitive skill there are the above mentioned analyzed and automatic factors. The latter skill: Cognitive

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7. Instruction, here is "the total set of interactions in which teacher and students participate" (Ellis, 1984b: 32).

Control, refers to the learner's ability to deliberately (i.e. consciously) focus on relevant aspects of a problem and not be misled by other distracting alternatives.

In Bialystok's view, the best way forward in the study of strategies is to aim for generality in a broad cognitive framework rather than search for language-specific strategies. Thus, she attempts to account for strategies in IL learning and performance through the analyzed knowledge and cognitive control dimensions. She argues that the ability to execute any learning strategies:

"depends not so much on contextually or individually determined factors, such as personality, task instructions etc., but on the learner's developmental level with particular respect to analysed knowledge and cognitive control" (Bialystok 1984: 9).

Certainly, one of the aims of IL studies is not a 'set' of more or less isolated communicative or learning strategies, but rather a generalized strategic competence that could be brought to bear on the learning task by different learners in various ways, under different conditions. It seems to me, however, that such a complete 'generalized strategic competence' would possibly not be achieved unless taking into consideration various ranges of linguistic and extralinguistic variables, since variability does not merely depend on cognitive skills but on psycho-social factors as well, (refer to Sections 2.2.2.5; 2.2.2.6. and their subsections).

### 3.2.3. Interim Summary

When approaching the dual competence models discussed above from a different view, particularly, Widdowson's (1978: 1-20) notions of 'use' and 'usage', both models appear to account for the importance of functional factors (i.e. use), rather than formal practising (usage).<sup>8</sup> The former represents the concept of Krashen's acquisition, as well as Bialystok's implicit knowledge, whereas, the latter, usage, accounts for 'learning' and 'explicit

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8. Although Widdowson does not claim that his notions are directly applicable to the 2 models, his distinction is vital to both models.

knowledge<sup>1</sup> in Krashen's and Bialystok's models respectively. These models of SL learner's competence reflect the utility of meaning, rather than form. Different approaches, methods and techniques focus on ways of communicating, of interacting and transacting social and propositional information. All this is, also, implicit in Brumfit's assertion of the primacy of fluency (as opposed to accuracy) work: "Only when there are messages being carried, which are significant to the learner, will there be full engagement with the linguistic code" [emphasis mine] (Brumfit 1984: 122).

#### 3.2.4. Tarone's Capability Continuum Model

Tarone et al. (1976a) elaborate on Selinker's IL definition by hypothesizing the existence of a:

"separate linguistic or psycholinguistic system (inter-language), which forms in the mind of the learner and which may take the form of a pidgin and which may develop into a separate dialect in its own right. This system draws on both the active language and the target language, as well as other sources for its surface form".

Tarone et al., however, do not elaborate on How or When SL learners draw on the NL, nor to What extent they do.

Tarone (1979, 1982, 1983), referring to Sociolinguistic findings in general and Labov's (1969) 'Observer's Paradox'<sup>9</sup> in particular, has proposed a continuum model to account for the learner's variable performance. According to Tarone, since IL is a "natural language" (Adjemian, 1977), the SL learner, being a native speaker of his IL, has the capacity for style shifting. She hypothesizes that just like every native speaker of any language, the learner's IL 'capability' (a term she prefers for competence), is heterogeneous. Thus, the Labovian methodological axioms, then, apply also to IL speakers. First, every speaker shifts

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9. The aim of applied linguistic research is to describe the way people talk when they are not being systematically observed. Such data, however, can only be obtained by systematic observation.

styles as the social situation and topic change simply because "there are no single-style speakers". Second, the styles of a speaker form a continuum and are defined by the amount of attention paid to speech. Third, the most systematic and regular style is the 'vernacular', where the minimum amount of attention is given to speech. Finally, when a speaker is systematically observed, a formal context is thereby defined, and the speaker pays more than minimum attention to speech.

Within this model (Figure 3.10.) the vernacular IL is located at one end of the IL continuum, the other end of which is occupied by the superordinate style, evoked when most attention is paid to speech. This careful style, contrary to the vernacular, is highly fluctuating because it is permeable to invasion from the TL or the NL (especially on the phonological level).

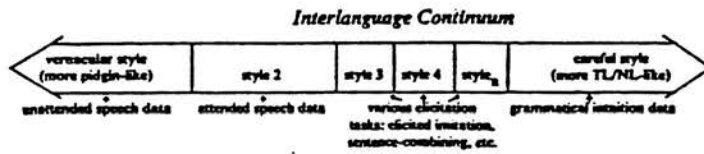


Figure 3.10. Tarone's Capability Continuum of IL

(Source: Tarone, 1983)

There is, however, a relationship between the learner's vernacular and careful style. This is, in fact, indicated in the notion of a continuum, as one style gradually blends into another and the division into discrete categories serves only as a descriptive convenience. This is where Tarone's view of SLA differs radically from Krashen's. Whereas Krashen deals in a dichotomy, and rejects any possibility of transfer from the 'learned' to the 'acquired' store, Tarone deals in a continuum and allows for the 'spread' of knowledge initially associated with the careful style towards, and eventually into, the vernacular style.

Style shifting, i.e. variability, is explained as "regular language behaviour of second language learners, which is assoc-

iated with the use of different elicitation tasks" (Tarone, 1983: 154), depending on the degree of attention paid to them. Tarone proposes two means of internalization of regularities/rules into the learner's SLA. In one means the internalization of IL begins in the unattended, casual style. As Tarone (1983: 155) puts it "the learner spontaneously produces simple structures in the vernacular style", as a result of acquisitional universals. Later, acquisition principles enable regularities to be created in a particular order in the vernacular style. The second means of internalization begins in the superordinate style, when the learner incorporates a new rule consciously (through monitoring), then after time moves towards "less formal types of performance" (Hyltenstam, 1978b: 6). This will show up in informal production (i.e. 'the vernacular style'). This possibility presumably parallels Bialystok's mechanism by which explicit knowledge by practice can become incorporated in implicit knowledge.

The relationship between various styles or tasks are supposed to be expressed in terms of underlying variability and categorical regularities. That is to say, along with style-shifts, categorical regularities might become variable or vice versa. A representation of Tarone's style, shifting continuum is illustrated below (Figure 3.11).

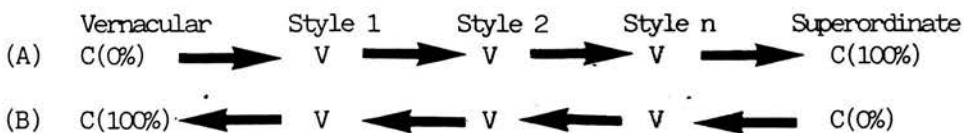


Figure 3.11

Where A = First means of internalization  
       B = Second means of internalization  
       C = Competence

(Adapted from War 1984: 33)

Ellis (1984b) refers to Tarone's Capability Continuum to explain the relationship between instruction and acquisition. This relationship "can now be understood as the relationship between different types of interaction (which can be plotted on a capability continuum ranging from the careful to the vernacular)"



(p. 32). Furthermore, Tarone's interpretation accords more easily with Long's (1983a) conclusion, that the available research does show a positive effect for instruction where rate is concerned. Accepting Tarone's view that ILs are built in two ways, (directly by the learner producing simple structures in his vernacular style, and indirectly from the spread of forms that enter the linguistic system of the learner's careful style), then it is more reasonable "to expect that instruction which caters for the careful style linked to exposure that caters for the vernacular style, will prove more successful than exposure alone" (Ellis 1984b: 31).

#### 3.2.4.1. Evaluation of Tarone's Model

The complete adaptation of a first language Socio-linguistic model to account for IL variability phenomenon, without considering the differences that may exist between different continua, raised some basic problems from which the Capability Continuum Model suffers:

- (a) Labov's concern is with styles of equal complexity; whereas in SL production, there is a difference in complexity in the learner's language in the different styles. It seems, then, movement along the continuum is seen as a mere restructuring process.
- (b) In the original Sociolinguistic theory, the choice of one style or the other is influenced by psycho-social variables, e.g. setting, topic, interlocutors, and so forth (see Brown and Yule, 1983, for a review). The basic concept underlying style-shifting, is the use of language beyond the communication of linguistic meaning, such as the subtle communication of power, or of solidarity and oneness. Style-shifting, therefore, is generally identified with communicative competence (Hymes, 1971a), which is over and above linguistic competence. It is logical to assume that an IL speaker has restricted means at his or her disposal. A learner with a restricted grammar, cannot express a diverse range of functions (uses), even if he/she wishes to do so. In other

words, it seems difficult to maintain the strong causal relationship which Tarone claims between style-shifting and learner's IL variability. Because options like the use of language beyond the communication of linguistic meaning are inappropriately applied to learners who are still 'struggling desperately' to communicate the basic. The learner has little or sometimes no choice but to make do with what he or she has.

- (c) Tarone does not specify the parameters of style-shifting for an IL speaker, apart from those implied in the first axiom (i.e. situation and topic).
- (d) The term 'attention' is more applicable to the native speaker in possession of a complete linguistic and communicative competence, while for an SL learner, maximal attention without knowledge of the TL forms or the rules to produce them, does not increase accuracy or guarantee the suppliance of a rule. In Seliger's (1979) study on the nature of and function of language rules, it was found that there was no correlation between knowledge of rules and performance. Although maximal attention was involved, since the study was designed to focus on form, three out of four adults scored zero.
- (e) Tarone presents the style 'vernacular' as bearing no relationship to the TL. This is in accordance with Selinker's IL hypothesis, in which IL is perceived as an entity which is more related to the NL, rather than as a TL-oriented system. Since the observable facts point to the learner's language in the vernacular style and in other styles gradually becoming like the TL as it develops, it seems difficult to completely maintain Selinker's concept of IL and consequently Tarone's Model.
- (f) Another major criticism of Tarone's account of intertask variability, is the quantity and quality of the data she presents to support her view. Clearly, Tarone considers

that the Capability Continuum model accounts for the variability on all levels of learners' language (i.e. phonology, syntax and semantics). She fails to make a distinction between the nature of the learning problems on the various levels. This is obvious in Tarone's mixed evidences taken from these different levels. Moreover, she does not emphasize the fact that the most convincing evidence for the existence of a continuum of styles comes from phonological studies (e.g. Dickerson and Dickerson, 1977); because, in any case, the most likely candidate for Selinker's restructuring continuum is phonology.

- (g) A rather minor point, Tarone (1983: 73) differentiates between style - and register-shifting. The former refers to the degree of attention that is paid to speech, whereas, the latter (i.e. register-shifting), has to do with formality of situation. This seems to be a rather unfortunate distinction, since attention and formality are most probably highly related.

These criticisms however, do not necessarily invalidate Tarone's paradigm. As for the limitations concerning the evidence (point (f) above), there is some convincing evidence of intertask variability in syntax (Al-Jumaily, 1982; Thiele, 1983). Thiele's conclusion is:

"the results clearly indicate that there exists variability with respect to elicitation tasks [ ... ]. This variability turned out to be highly systematic. Tarone's claim that style-shifting along task co-occurs with shifts in variable and categorical regularities in language use, can strongly be supported" (1983: 48).

But it should be noted that the above mentioned studies, tend to support a differing-complexity continuum rather than a restructuring one.

### 3.2.5. Ellis's Variable Competence Model (VCM)

The model describes 3 inter-related sets of processes involved in SLA. These three sets of processes, to quote him, are: "(1) the processes by which the language user's output helps to form

'input' for the language learning mechanisms; (2) the processes of internalising new knowledge from the input; and (3) the processes of production and reception" (Ellis, 1985: 47).

In the VCM, the learner is credited with a single heterogeneous knowledge store. Ellis represents this as consisting of four cells, each representing a particular type of knowledge (See Figure 3.12). Thus in A and B, the knowledge is non-systematic or only partly analyzed. A differs from B in terms of how automatic this knowledge is.

Degree of attention required	D automatic analysed L2 knowledge	B automatic unanalysed L2 knowledge
	C non-automatic analysed L2 knowledge	A non-automatic unanalysed L2 knowledge
	+ Degree of systematicity of L2 knowledge -	

Figure 3.12. Types of SL knowledge

(Source: Ellis 1985: 50)

Corresponding to the various types of knowledge are different procedures for constructing discourse: primary and secondary processes. The former are responsible for engaging in unplanned discourse. They draw on knowledge that is relatively unanalyzed. Secondary processes, on the other hand, are evident in planned discourse and draw on knowledge towards the analyzed end of the continuum. According to Ellis the primary processes are part of everyday language use; the secondary processes are the product of developed cognitive abilities. Ellis's model is very similar to that of Bialystok (Section 3.2.2.).

### 3.3. THE STUDY OF VARIABILITY PHENOMENON IN LANGUAGE

The theories and models discussed above, are concerned with the reasons for variable performance in IL. So far, however, empirical evidence for variability phenomenon is still scarce, especially in complex syntactical areas. As a result, theoretical models of language acquisition still find it difficult to incorporate and explain such well documented observations satisfactorily.

Variability or variation in language can be defined as linguistic change or movement along some sort of continuum, either lectal or developmental. This is in accordance with Labov and Labov's observations that, "the study of acquisition is necessarily the study of language change and variation", and that "the view of language as a discrete invariant set of categories cannot deal with change in any rational way" (Labov and Labov, 1978: 1). Variability is the key notion in IL, as the learner by definition is hoped to show permanent change in his linguistic behaviour (Section 3.1.5.3.).

Littlewood (1981b: 151) listed three main categories of influential factors to account, not only for variation between learners, but also for variation within the same learner's performance.

(a) When the SL is being used to communicate meanings, one source of variation should be expected to lie in how 'communicatively functional' a feature is in a specific situation. A linguistic feature, for example, is more likely to be omitted when it is redundant to the meaning being conveyed, and is more likely to be produced when it transmits necessary information. Evidence to support this is found in Pienenmann's (1978: 51; 1979: 59) analysis of immigrant children's German in which obligatory elements were frequently omitted when they were redundant to immediate communication (quoted by Littlewood, *ibid.*). Also, Meisel et al. (1981: 30) reported one subject who tended to omit verbs of a set whose meanings were frequently predictable from context (e.g. the copula, 'have', or verbs of motion followed by adverbial phrase). (b) Different linguistic environments are expected to be more or less favourable to learners' attempts to

produce the TL forms. On the syntactic level, evidence for factor (b) is offered by Hyltenstam (1977). His data suggested that SL learners of Swedish mastered the syntax of negation in a regular sequence of linguistic environment (see Section 3.3.4.1.). Finally (c) social-situational factors are also expected to exert an influence on the forms used:

"In particular, we would expect speech to be more norm-governed in some situations than in others, either because the normative constraints are intrinsically stronger or because the speaker has more opportunity to attend to them (or for both reasons)" (Littlewood, 1981b: 151).

SLA studies in the past decade have highlighted the extent and importance of variability in learners' SL production. The following types of variation have been shown to be present:

(i) Intertask Variability: This type of variability is evident in production on different language tasks (it is equivalent to Littlewood's (c) category). Intertask variability is supported by theoretical models, e.g. Tarone's Capability Continuum (Section 3.2.4.), as well as empirical studies, e.g. Dickerson and Dickerson (1977); Al-Jumaily (1982); Thiele (1983), mentioned in (Section 3.2.4.1; & 3.3.2.4.). Studies of this type of variability contribute much to the understanding of the nature of SLA.

(ii) Variability over Time: Since IL is dynamic, becoming increasingly more and more complex and target-like, variability can also be observed over time. This is documented longitudinally in the individual learner (e.g. Ravem, 1968; Hakuta, 1974a, 1976; Huebner, 1985), or cross-sectionally by examining the language of a group of learners at different stages of learning (see Sections 2.2.2.2.3. and 2.2.2.3.3.).

(iii) Intratask Variability: Variability in learner's realization of feature within a task. This inherent, dynamic variability in learners' IL is the result of the developmental process. Studying this type of variability is essential for the determination of the SLA's mechanisms. Intratask variability is

observable on two levels: (1) within a particular area of language, like negation or interrogation, between the use of particular variants which may be constrained by the linguistic environment of the form; and (2) patterns of variability in the learning of different areas of language in relation to each other.

Methods used in variability analysis in Socio-linguistics are applied in SLA research. It is, therefore, necessary to give a brief resume of variationist methods in L1 research.

### 3.3.1. Variability Analysis in L1 Research

Another type of variation, namely variation in native speaker's performance (horizontal and synchronic variability), has always been of central concern to socio-linguists (e.g. Labov, 1966). Variation may result from one or more factors, such as time, place, social setting, situation, age, sex and so forth. These extra-linguistic factors evoke a particular linguistic behaviour, i.e., the varieties. Theoretically, then, a language is made up of an unlimited number of such varieties, a fact that naturally causes considerable difficulties in an attempt to fit these observations into theoretical framework which can describe, explain, and predict those varieties.

Some of the concepts to account for variation which have been developed to date include among others:-

- 1) The variable rules by Labov (1966,1969) and Labov et al. (1968).
- 2) The implicational analysis by Guttman (1944); Bailey (1969); De Camp (1970, 1971a, 1971b); and Bickerton (1971).
- 3) The variety grammar by Klein and Dittmar (1979).
- 4) The markedness theory (e.g. Trubetzkoy, 1939; Eckman, 1977; and Kellerman, 1979).

### 3.3.2. Variable Rules (VR)

Labov has argued extensively against the homogeneity of a speech community which takes the "ideal speaker-hearer" as the centre



for its description, since this linguistic approach adheres to a model that allows only categorical rules to figure in the grammar of any speech variety. So, in order for the crucial problems of linguistic structure and linguistic change to be resolved, Labov has promoted the notion of the heterogeneity of a speech community whose members demonstrate variability in their speech behaviour.

Labov believes that not only are there variations in any variety utilized in a speech community, but also that these variations are systematic and structured. He has also advocated the belief that some sociolinguistic variables can be distributed regularly over several social contexts which can be ordered in a hierarchy. Labov also believes that certain sociolinguistic variables have shown both stylistic and social stratification. Finally, he has also demonstrated that certain optional linguistic rules are variably constrained by different grammatical environments. As an example, contraction of the copula in English and deletion of the copula in Black English are favoured by the presence of a preceding pronoun rather than by a preceding NP (Labov, 1969).

Labov goes beyond a mere assembling of variation in language. He is not only interested in discovering variations in language per se, but takes a further step, which is demonstrated by his desire to pattern these variations in coherent formal statements, as a part of a grammatical description. His linguistic approach is dependent on the generative model and his variable rule draws on the standard Chomsky and Halle format. In this variable rule, a convention to express degrees of optionality in different environments, is added.

#### 3.3.2.1. Variable Rules in Terms of Additive Model

The first consistent descriptions of linguistic variation as constant, regulated heterogeneity, are given in Labov (1966), Labov et al. (1968) and Wolfram (1969), which have demonstrated that speech community shows patterned variation in the case of

its verbal repertoire and such variation can be related to sociological variables.

The concept 'variable rules' is distinguished from two other types of rules, which are used for the description of linguistic data. Labov et al. (1968) and Labov (1969) discuss three rule types.

(1) Categorical Rules: The majority of rules are of this type, they are difficult to define as they are never broken. They are 'invisible' to the speaker or in Bialystok's (1978) terms 'unanalyzed and implicit'. Labov (1969) rejected the categorical instruction of 'idealized grammar' (Chomsky, 1965: 3-4) such as:  $X \rightarrow Y/A-B$ , where X is realized as Y only in the context A-B (i.e. the stated environment) 100% of the time.

(2) Semi-Categorical Rules: Conventionally, this type of rule is called 'optional rules' by the generative grammarians. Such rules are perceived, interpreted and 'can be expressed'. Though they are not frequent, they are reckoned to fall under a language's potential range of expressions. Labov also contends that these 'optional rules' cannot be used to account for the systematic variation observed in his data. Cedergren and Sankoff (1974) also argue along similar lines. They suggest that whereas an obligatory rule operates on all input strings that satisfy its structural description, an optional rule may or may not apply to a satisfactory input string, and thus it is inadequate to describe systematic variation in language performance, which is not purely optional. The option can depend very much on the linguistic environment and other non-language factors (e.g. class, age, sex and social context). According to Cedergren and Sankoff (op. cit.), the notion of optionality is rejected as it:

"fails to capture the nature of the systematic variation which exists even on the level of the grammar of a single individual. It does not permit the incorporation of relativity or covariation between the presence of certain features in the linguistic environment of a rule and the frequency of operation of the rule. The label 'optional'

fails to convey any information as to how the elements of the structural description of a rule favour or constrain its operation. Rather, use of this label implies that all such information is foreign to the COMPETENCE of the native speaker. [ ... also] it is difficult to escape the conclusion that these aspects of performance that are found to be thoroughly systematic in an individual and throughout a community are reflections of linguistic competence" (Cedergren and Sankoff 1974: 333-4).

(3) Variable Rules: Rules of type (3) cannot be broken by individual utterances. They are known to the analyst as a result of his investigation. They are only subconsciously perceived by the learner and provide information about the speaker (sex, education, origin, etc.). Usually, speakers cannot make any direct pronouncements about these rules. The concept of variable rules is found to be useful to capture the variability phenomena. Since the aim is a quantitative analysis of linguistic variation, the variable rule is characteristically seen as a function of certain selected extralinguistic and intralinguistic parameters. The notion of variable rules is meant to provide an argument against the idea that linguistic rules must necessarily be of a categorical nature. This notion is based on the conviction that language displays regular variation, and that no communication would be possible without linguistic and stylistic shifts. As Labov (1970: 166) puts it "we argue that it is the absence of style-shifting and multi-layered communication systems which would be dysfunctional".

Labov's (1969) study provides a new dimension for the study of variability, by focusing on it as a central aspect of linguistic competence. Labov incorporated systematic variation into linguistic description and theory, by extending the concept of a rule of grammar to that of a variable rule, where the predicted relative frequency of a rule's operation is made an integral part of its structural description.

In broadening the concept of conventional generative rules through the addition of quantitative measure scales which specify the application of a rule in relation to linguistic environment and extralinguistic content, Labov seeks "to connect theoretical

questions with a large body of intersubjective evidence, which can provide decisive answers to those questions" (Labov, 1969: 757). To achieve this end, for each category of contexts a number between 0 and 1 can be associated with each optional rule in the grammar. This number indicates the probability of application of the rule in this context. This probability is a well-defined function of the structural properties of the linguistic environment of a linguistic variable on the one hand, and extralinguistic parameters (e.g. age, social status of the speaker, speech situation) on the other.

However, in view of the very considerable number of linguistic variables involved, it seems unrealistic and practically impossible to associate probability values with each optional rule for each class of contexts. Thus, in Labov's (1969) analysis of the contraction and deletion of the copula in Standard and non-Standard English, he proposed to investigate only a very limited number of variables, both linguistic and extralinguistic, and to see what effect the value of each variable had on the frequency of application of a particular optional rule. Labov formulates a variable rule for Copula deletion as constrained by the preceding NP:

$$/Z/ \langle 0 \rangle / \begin{matrix} \alpha & \text{Pro-} \\ \beta & \text{NP-} \end{matrix}$$

(Source: Labov, 1969)

Where the variable constraints are features of the environment which are indicated by angled brackets. Weighting of features may be indicated either by vertical order or the assignment of Greek letters.

The type of rule developed by Labov specified essentially only the output frequency of rules in a given corpus, and did not distinguish between theoretical probability and frequency of application. Moreover, Labov formulated the probability value of each variable according to 'additive model', as it is known in statistics. If, for example, 'P' is considered to be the probability of application of a rule in a certain linguistic environment; then  $P = P_0 + \alpha + \beta + [ \dots ] + \omega$  where  $P_0$

represents the probability value resulting from the individual characteristics of the speaker in question (e.g. regional, contextual, social and so forth), and the Greek letters are quantitative values, indicating the influence of single features in the linguistic environment of the variable. The features could be symbolized as A, B, C, [ ... ], Z; and thereby, P in the following:  $P = P_0 + \alpha(A) + \beta(B) + [ \dots ] + w$  (Z) is the probability of application of the rule as it results from the quantitative contributions of the parameters (i.e.,  $\alpha, \beta, \dots$ ) in relation to the features (A, B, ...). The quantitative values (Greek letters) are specified in the formula only when the corresponding linguistic features are present, (irrespective of the presence or absence of other features), (Dittmar, 1976).

Artificially, the applicational probability of the rule is considered to begin as 1 when the value resulting from the formula is greater than 1. When the resulting value is smaller than 0, the probability value is taken to be 0. In order to prevent the additive model from yielding probability values outside the interval 0-1, Labov (1969: 740), postulated the "principle of geometric ordering", which was meant to help in establishing the relative quantitative size of each feature. The principle implies that the coefficient  $\beta$  is half the coefficient  $\alpha$ , but double the coefficient  $\gamma$ .

The principle of geometric ordering proved "to do insufficient justice to Labov's data" (Dittmar, 1976: 137). Thus, the formal structure of variable rules developed and proposed in Labov ('69) "has meanwhile been withdrawn by Labov because of various notational defects" (Dittmar, 1976: 136).

#### 3.3.2.2. Variable Rules in Terms of Multiplicative Model

In this model, as in the Additive Model, a quantitative value is associated with each feature in linguistic environment that constrains the application of the rule in question. When these independent factors are multiplied, the product is the applicational probability of a certain rule in a certain environment. Cedergren (1973) describes the variable rule in terms of

multiplicative model as follows:

"For each variable rule in every environment there exists a quantity  $p$  which represents the probability of rule execution [...] it is a universal tendency for  $p$  to be in the form of:  $p = 1 - (1-p_0) (1-\alpha)(1-\beta) \dots (1-W)$  where  $p$  is an input probability independent of context and  $\alpha, \beta, \dots W$  represent the contribution of each relevant feature in the environment" (Cedergren, 1973:13-14).

This formalization, she writes:

"assumes that each of the environmental factors affects the probability of rule application in a consistent and independent manner, regardless of the presence or absence of others relevant to the rule". (op. cit.).

Thus, a variable rule of the type:

$$X \longrightarrow \langle Y \rangle \quad / \begin{array}{l} (a) \\ (b) \\ (c) \\ (d) \end{array}$$

where  $X$  = a linguistic category or element  
 $\langle \rangle$  indicate variability  
 $/$  = environment

states that  $X$  is realized as  $Y$  most often in the environment (a), next in (b) and so forth. So within this model there is an integration of categorical and variable rules.

If variable rules are to:

- 1) predict rule frequencies in accordance with the observed data;
- 2) have a maximal range of application;
- 3) permit sensible and defensible statements about the linguistic competence of speaker/hearer;

then a formation in terms of the multiplicative model seems to be more appropriate; since there are advantages of the multiplicative model over the additive one. For instance, it yields only value values between 0 and 1, whilst the additive model needs to be adapted to achieve this. Secondly, the multiplicative model provides better possibilities of interpretation in relation to probabilistic components of the linguistic competence of speakers.



Within the concept of variable rules Cedergren and Sankoff (1974) introduced the Multiplicative model which views variability as a central focus of linguistic competence. This model was mainly put forward to account for the competence/performance distinction (Chomsky 1965) and also for the probabilistic analysis of speech occurrences. As they put it:

"The power of this approach lies in the uniquely well-defined and economical relationship it posits between competence and linguistic performance, analagous to that between a probability distribution and a sample, or between a model and a simulation. This relationship [ ... ] integrates generative and behavioural aspects in an elegant way [ .... ]. We distinguish rule probabilities from rule frequencies, assigning the former to competence and the latter to performance" (Emphasis added) (Cedergren and Sankoff, 1974: 353).

While discussing the question of whether the variable rules belong to the realm of competence or to that of performance, Labov (1969) states:

"I am not sure whether this is a useful distinction [competence vs. performance] in the long run. There seem to be some limitations of speakers which have to do with memory span, or difficulties in articulation, which are outside the linguistic system proper [ ... ]. Are the variable constraints [ .... ] limitations on performance rather than competence? [ ... ]. The variable rules themselves require at so many points the recognition of grammatical categories, of distinctions between grammatical boundaries, and are so closely interwoven with basic categorical rules, that it is hard to see what would be gained by extracting a grain of performance from this complex system" (p. 759).

It should be pointed out, however, that the multiplicative model is more complex in the sense that the probability of non-application of a rule must be distinguished from that of its application: these respective values are calculated in different ways. (See Cedergren 1973; Cedergren and Sankoff 1974; Dittmar, 1976).

### 3.3.2.3. Criticism Against Variable Rules

The concept of variable rules has been criticized from various quarters. The arguments can be summarized in the following way:



1. The variable rules destroy the fundamental distinction between Competence and Performance. As this distinction has achieved so much for linguistics, variable rules would bring "drastic and undesirable changes in current theories" (Bickerton 1971: 460) in their wake.
2. DeCamp (1971a: 37-9) argues that, since there is no adequate sociological theory, and since, moreover, sociological categories are, more likely to be nondiscrete (i.e., 'continuous features'), there is no reason to treat sociological categories as discrete. He also posits that Frequency Analysis belongs to the "world of inductive theories" and thereby to a "theory of linguistic performance" (DeCamp, *ibid*: 35).
3. Bickerton (*op. cit.*) asserts that, if, in addition to categorical rules, there should also be variable rules, then a speaker must not only have the ability to acquire these two different rule types, but must also have some kind of 'recognition device' which will tell him or her whether to interpret a particular set of linguistic data as 'rule-plus-exceptions' or as 'areas-of-variability' (p. 460).
4. Since all variable rules so far presented are based on data collected from a group of speakers then Labov's variable rules are related to groups of speakers and not to individuals. If they were to appertain to speakers' competence, then, the individuals would have to check constantly whether they were using the frequencies laid down for particular environments, and whether they were doing so in conformity with those defined for groups. Eventually, this would lead to the absurd conclusion that they would have to continue to check their speech even in the absence of all other group members (Bickerton 1971: 460). Bickerton supports his objections with arguments from a mentalist- transformationalist tradition. Thus he prefers the analysis of idiolects (speech behaviour of individuals) to the investigation of sociolects (speech behaviour of groups).
5. Others have criticized the notion of VR on the ground that it departs from the generative grammar (GG), contrary to claims made by Labov (1969). Some, for example, (Bickerton 1971, Romaine, 1981) see that VR and GG are incompatible because the

latter describes rules internalized and used by one individual. Others (Kay and McDaniel, 1979) relate such departures to the fact that generative rules deal with sentence type and hence the frequency of the occurrence of each type is irrelevant; whereas such frequency is the pillar of VR.

6. Another argument against VR is that it suggests that the direction of change is the same for all the groups within the speech community. There is no prior reason why this should be the case. The only feasible reason seems to be that it allows us to state one VR for the whole community instead of 2 or more rules. To put it differently:

"The idea that a speech community can move as a whole like a physical body in a certain direction, appears to be too simplistic and unconvincing" (Romaine 1980: 51).

Al-Amadidhi (1985) presents data which demonstrate that a change can move in different directions in respect to different groups of speakers within a single speech community.

7. The VR as presented by Labov contradicts itself when examined in relation to sound change in progress. The basic idea behind the VR is its uniformity throughout the speech community. However, for a change to take place, the speech community must go through a stage in which different groups do not share the same phonological constraints. At this stage, the grammar of such community cannot be described in terms of a single variable rule, i.e. different groups of speakers would have different rules with different levels of ordering of the constraints. Thus, groups do not share the same variable rule (Romaine, 1980).

#### 3.3.2.4. Application of Variable Rules to SLA

Variable Rules model did not remain without influence on SLA research, because a variable rule is "a rule which captures the **system** underlying variable performance" (Dickerson, 1976).

Furthermore, the identification and quantification of variants and their environments display the inherent pattern underlying variation. Tarone (1982) has suggested that one phenomenon which must be accounted for by any theory of SLA is the phenomenon of syntactic variability in learners' IL, and it is precisely

because of this fact that the static models which account for the language of the 'ideal speaker-listener' is inadequate. The application of the variable rules model has therefore contributed immensely to SLA studies (e.g. L. Dickerson, 1975; W. Dickerson, 1976; Dickerson & Dickerson, 1977).

Dickerson (1975) describes the application of the variability model to her longitudinal data of the acquisition and use of the English sound /Z/ by 10 Japanese-speaking learners. From the analysis, Dickerson found that the performance of all the subjects was similar in that their production of a sound was influenced by the phonetic environment and the same pattern of variants and environments were produced by all learners in her sample. Further, there was a regularity in the learners' progress over time. Dickerson's hypothesis was that for each subject the index scores should be ordered with reading of wordlists highest, followed by reading of dialogues and lowest free speaking. Not surprisingly, the patterning across the three styles in the tasks for all subjects was as predicted. Certainly, in free 'talking' people do not pay as much 'attention' (Tarone 1979) as they do when reading a list of words or a dialogue. Also, in reading what readers only have to do, is to read some linguistic data; whereas in free speaking, people have to 'create' and organize what to say.

On the basis of the results, Dickerson concludes that the subjects' behaviour is not only systematic, it is also consistent. The behaviour is so consistent that it can only be captured by a variable rule which "must be sensitive to phonetic context, the use of multiple variants and external style fluctuations" (1975: 405). The importance of Dickerson's study is that it was one of the first to manifest empirically that the learner's IL is a system of variable rules and this is the only model that can adequately account for the learner's variable performance.

Another study which investigates the application of the variability model to the acquisition of the English sound system is Dickerson's (1976). The study is a longitudinal one of the

acquisition of an English sound in nine environments by 5 Japanese learners. His findings support those of Dickerson (1975), namely that the variable performance of each subject reflected a profound order controlling the acquisition process. It is a rule-governed order/grammar which "is not a grammar of obligatory rules nor optional rules [ .... ]. Rather, this grammar consists mainly of variable rules" (Dickerson 1976: 225).

Dickerson and Dickerson's (1977) analysis shows that the learner's language not only varies as a function of time, but also along with other factors, in particular, variability is the result of elicitation task, presumably revealing a certain style-shift in performance.

### 3.3.3. Implicational Analysis (IA)

In the study of sociolinguistic variation, contextual constraints of rule application form the basis of implicational scaling. The maximum number of rule applications in a particular context mark it as the most favoured environment. Second, since language changes gradually, an element X is realized as Y only in one environment at a time; such changes mark a graduated movement ranging from 0% to 100% suppliance of Y.

#### 3.3.3.1. Bimodal Scaling

DeCamp (1968, 1969, 1970, 1971a, 1971c) proposes an implicational scale technique (i.e. the presence of an item or a feature implies the presence of another feature) for scaling individuals (rather than groups) and language varieties according to the presence and absence of particular features or attributes in their speech. Before him, implicational scaling was, originally, introduced by Guttman (1944) under the name of 'scalogram analysis', for attitude measurement in sociological research. Later, it was extended by Torgerson (1958). Implicational analysis was first applied by DeCamp (1968) in his study of post-Creole continuum in Jamaica in which he was able to show a definite implicational pattern in the presence and absence of six socially significant linguistic features such that they formed a hierarchical implicational scale. This was also supported by his (1969)

study. DeCamp's (1969) findings are summarized in the following table:

Table 3.2. Ordering of 11 speakers by 10 linguistic features on an implicational scale

Feature Speaker	H	J	B	I	A	E	G	C	F	D
5	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	-
6	+	+	+	+	+	+	+	+	-	-
2	+	+	+	+	+	+	+	-	-	-
10	+	+	+	+	+	+	-	-	-	-
7	+	+	+	+	+	-	-	-	-	-
1	+	+	+	+	-	-	-	-	-	-
9	+	+	+	-	-	-	-	-	-	-
4	+	+	-	-	-	-	-	-	-	-
11	+	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-

Where A = it is I; B = may I; C = vahz; D = may he;  
 E = the man whom I; F = shan't; G = needn't; H = eyether  
 I = tomahto; J = I shall

(Adapted from DeCamp 1969: 4)

DeCamp defines the implicational analysis as "a binary relation between linguistic features and language varieties (dialects, styles, etc.), so selected, so arrayed in order, as to result in a triangular matrix" (1971a: 33). The principle of implicational analysis is illustrated below:

Table 3.3.

	M1	M2	M3	M4	M5
V1	1	1	1	1	1
V2	1	1	1	1	0
V3	1	1	1	0	0
V4	1	1	0	0	0
V5	1	0	0	0	0
V6	0	0	0	0	0

Where M indicates a linguistic feature 1 = presence  
 V indicates variety 0 = absence

If the value of any desired point of intersection of the matrix - the product of  $M \times V$  - is 1, then this implies that any above or to the left of it is also 1. On the other hand, a value of 0 implies that every value below or to the right of it is likewise 0. Therefore, the presence or absence of other features can be said to be implied by the presence or absence of other features and the features themselves can be hierarchically ordered in terms of how favoured they are across the language varieties being scaled. DeCamp asserts that:

"Implicational scales are not a new component added to a grammar; they are only an extension of the redundancy rules and hierarchies of features" (1971a: 37).

According to DeCamp, the concept behind the implicational scaling is that a speaker through his competence has control over not only an unlimited number of sentences but over innumerable variants of these sentences, which correspond to his social experience. Thus, every speaker has his/her own idiolect: an infinite set of sentences which are all generated by an 'idiolectal grammar'. An idiolectal grammar is a specific finite set of rules of an individual speaker-hearer's linguistic competence. A language, then, is the result of the intersecting set of idiolects which are all generated by a 'grammar'. A grammar is an individual finite set of rules which represents the idealized competence of a language community (DeCamp 1969: 18).

The styles specific to situations and roles of which a speaker must have a command are too numerous for them not to be governed by some form of competence: every speaker acquires a 'socio-linguistic competence' which is necessary to be described and explained (DeCamp 1971a: 30). Thus, he sets up abstract units in the grammar to correspond to style shifting; these units are represented in deep structure and control the conveyance of syntactic and semantic features to the surface structure.

The implicational scale has the advantage that speakers can be classified by purely linguistic features and only then be correlated with extra-verbal parameters. It provides a very powerful



tool for scaling variable linguistic data to determine regular relationships which exist between variables. The scaling has a wide application since it can be applied not only to a list of predetermined features, but also to the realization of a feature or form in its various environments at various linguistic levels (semantics, syntax and phonology). Therefore, since 1968, this technique of scaling variable data has been applied. Kessler's (1969) study successfully demonstrated an implicational scale of the relationship between environmental conditions under which the plural suffix can be deleted in American Black English, (namely Washington D.C.) in the varieties characteristic of the Four main classes.<sup>10</sup> Elliot *et al.* (1969) also successfully scaled the acceptability of certain marginally acceptable sentence types in the language of 27 native speaker judges.

Such a matrix (Tables 3.2., 3.3.), however, cannot accommodate a completely random distribution of sets of features in each of the language varieties, this fundamental objection to bimodal scaling relates to the binary designation which needs to be assigned to each feature (e.g. environment or attribute) being scaled. Whilst a classification along discrete levels (e.g., Yes/No; 1/0; Good/Bad etc.) may be quite suited to the scaling of attitudes (as in Guttman's work), it is less so to linguistic data. Most strict implicational analyses are forced to make what must be to a certain extent an arbitrary judgement as to what performance they assign a 1 or a 0. Stolz and Bills (1968) state "thresholds were set post hoc to give the optimal fit between the data and the scalogram model". An approach as such is certainly not satisfactory.

Even if a pre-determined cutting point is used, the essential problem is still present, forcing the inherent variability in language data into a binary framework. In linguistics the important relationship tends to be one of more or less rather than all or nothing. Clearly, the bimodal scaling gives us only

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10. Upper Middle Class, Lower Middle Class, Upper Working Class and Lower Working Class.



part of the information, the possible presence and direction of implication. It also finds support in the work of other Socio-linguists and gives rise to the Trimodal scaling.

### 3.3.3.2. Trimodal Scaling

This type is also called Variable Implicational Scaling. Bickerton (1971) suggests another method of scaling to be used in linguistics. This method scores over the Bimodal scaling as it overcomes the problem of binary designation. In Trimodal Scaling each feature is marked according to whether it is present (+), variable (V), or absent (-).

Variety/ Speaker	Feature/Environment				
	A	B	C	D	E
V1	+	+	+	+	+
V2	+	+	+	+	V
V3	+	+	+	V	V
V4	+	+	V	V	V
V5	+	V	V	V	-
V6	V	V	V	-	-
V7	V	V	-	-	-
V8	V	-	-	-	-
V9	-	-	-	-	-

Table 3.4. Theoretical Model obtained from a Trimodal Scale

Bickerton (1975) uses the Trimodal scale to compare social variables with hypothesized linguistic change. He found that informants ranked implicationally in regard to certain linguistic variables correlated to social or regional differences.

Trimodal scaling has the advantage of being consistent with basic characteristics and stages involved in linguistic change as described by Weinreich et al. (1968) mainly: (1) a speaker learns an alternative form; (2) old and new forms exist side by side within his competence, and (3) the older form becomes obsolete. For the measurement of some language phenomenon, e.g. in Creole-linguistics, the sensitivity of Bimodal and Trimodal scaling techniques is apparently adequate. The Trimodal scaling's

disadvantage, on the other hand, is that the result of its technique is "simply a more finely grained" (Wolfram & Fasold, 1974) implicational chart, still giving no information about actual frequencies.

#### 3.3.3.3. Quantitative Implicational Scaling

Like the variable rules methodology which "has proven a successful heuristic procedure for determining the linguistic and other influences on a substantial number of variable linguistic process" (Fasold 1970: 85), implicational analysis too has become an indispensable method for analysis of variability phenomenon in SLA. Andersen (1978: 223), for instance, observes that "implicational analysis is both a device for displaying variable linguistic data in ways which will reveal underlying systematicity in the data and a theoretical explanatory model". Still, however, Variable Rules and Implicational Analysis were not viewed as complimentary, but rather as competing (Fasold, 1970).

Such a scaling technique, for variable data that combines implicational analysis and frequency analysis is rigorous. Implicational analysis expresses the hierarchical implicational relationship between the linguistic features or variants in question, whereas, variability analysis basically involves the amalgamation of the expression of the degree of variability or optionality in the realization of these features as conveyed by variable rules and frequency analysis.

Fasold (1970) was the first to combine the two techniques. He demonstrated how Wolfram's (1969) data on Detroit Black American English <sup>11</sup> can be displayed so that the relationship between social class and deletion in number of environments was obvious.

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11. Wolfram (ibid) adopted Labov's interview techniques and methods of analysis to investigate the speech behaviour of 48 Blacks in Detroit. In this study, Wolfram carried out quantitative measurement for grammatical variables in addition to phonological ones. One of the extralinguistic variables was social status.

Through the use of scaling, the implicational relationship among the phonological environments is apparent. (See Tables 3.5A. and 3.5B.). One table (3.5A.) shows the original Wolfram's (1969) variable rules analysis, while the other table (3.5B.) expresses the degree of variability as well as the hierarchical implicational relationship.

Table 3.5A: Percentage of final cluster member absent when followed by consonantal and non-consonantal environments

<u>Class</u>	<u>Environment</u>	
	<u>Cons.</u>	<u>Non-Cons.</u>
UMWH	66.4	11.5
UMB	78.9	22.6
LMB	86.7	43.3
UWB	93.5	65.4
LWB	97.3	72.1

Where U = Upper; L = Lower; M = Middle; B = Black;  
WH = White; W = Working

(Source: Wolfram 1969: 62)

As can be seen from the above Table (3.5A.) variable linguistic features are tabulated from the frequency of variants in terms of social factors. Thus, the relationship between linguistic and non-linguistic variables is shown.

Table 3.5.B: Frequencies of simplified consonant clusters in the speech of Detroit Blacks by linguistic environments

<u>Social Class</u>	<u>Environment</u>			
	<u>C-##C</u>	<u>C#-##C</u>	<u>C-##(V)</u>	<u>C#-##(V)</u>
LW	.97	.76	.72	.34
UW	.94	.73	.65	.24
LM	.87	.62	.43	.13
UM	.79	.49	.23	.07

(Source: Fasold 1970: 558)

Where: a single cross-hatch (#) indicates a morpheme boundary;  
a double cross-hatch (##) represents a word boundary.

These figures show that the operation of the rule effecting the deletion of the second consonant varies, from almost negligible operation for the upper middle class in the least favourable environment, to almost categorical application in the lower working class in the most favourable environment. It is also easy to see

that when the potential cluster is followed by something other than a word beginning with a consonant, the operation of the rule is inhibited, as it is when there is a morpheme boundary between the two members of the cluster. When both of these inhibiting factors are present in the environment, the rule operates the least frequently for all groups (only one-third of the time or less). When neither factor is present, the rule operates most often for all groups. But when one factor is present and the other absent, it is the absence of a word beginning with a consonant which inhibits the operation more than the presence of a morpheme boundary between the members of the cluster. This ordering of constraints is repeated for all four social classes. Unless the notion of phonological rule is modified to indicate degree of optionality in terms of linguistic environment, the linguistic implications of these constraints will be lost (Fasold, 1970).

This combination of implicational analysis and frequency analysis (Table 3.5B.) enables the realization of some separate aspects of the speech capabilities of a speaker representative of a particular variety: (a) the existence of variable and optional rules; (b) the most and least favourable environments; (c) factors favouring rule operation, the hierarchical order in which these factors are ranked and finally (d) where data is available for an individual's idiolect: the probability of a rule operating under conditions defined by the factors.

For SLA research purposes techniques (VR & IA) must be combined: quantitative analysis can investigate speech use with precision and implicational scales can monitor speakers' success at gaining a command of the TL by means of the stages of Present, Variable and Absent features.

#### 3.3.3.4. Bailey Wave Model

By means of the implicational scale Bailey (1969, '74) attempts to

formulate a model of the 'panlectual'<sup>12</sup> competence of speakers, which does away with the traditional distinction between synchronic and diachronic, in favour of a dynamic speech model. Bailey's model is three-dimensional. It includes in the analysis the dimensions of: (1) the Language, which is heterogeneously structured; of (2) the Space in which it spreads, and of (3) the Time in which it changes. Viewed from the angle of space and time, linguistic features have a hierarchical implicational ordering. Figure (3.13) illustrates this model.

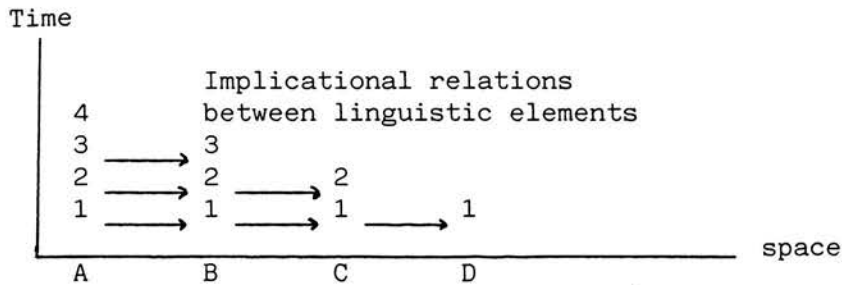


Figure 3.13: Bailey's Three-Dimensional Speech Model

(Source: Dittmar 1976: 156)

According to Bailey (1969: 123), A.B.C. and D. are idioms progressively more remote from the origin. The numbers represent points on an implicational scale (e.g. more likely environments) implied by the points higher up the scale (less likely environments). The arrays represent the spread of change. Bailey demonstrates the implicational spatial and temporal change for a series of English phonemes. The data which have been hierarchically ordered in this way can be transferred from the scale to a wave model, which corresponds to certain regional conditions.

The model is intended as a dynamic and predictive theoretical model of the mechanism of linguistic change suitable for both historical and descriptive analysis. The concept behind this

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12. Bailey's basic term for all varieties open to speakers is the 'Lect'. 'Panlectual' competence should include the ability of speakers to use different varieties in various contexts.

model as Bailey (1974) explains is that:

"patterns of a language are the cumulative result of natural, unidirectional changes, which begin variably and spread across the social barriers of age, sex, space and the like in waves" (p. 36).

Bailey (1973) assumes that the implicational patterning of language variation resides in the wave motion with which a change will spread. Figure (3.14.) shows wave motion and resulting implication patterning.

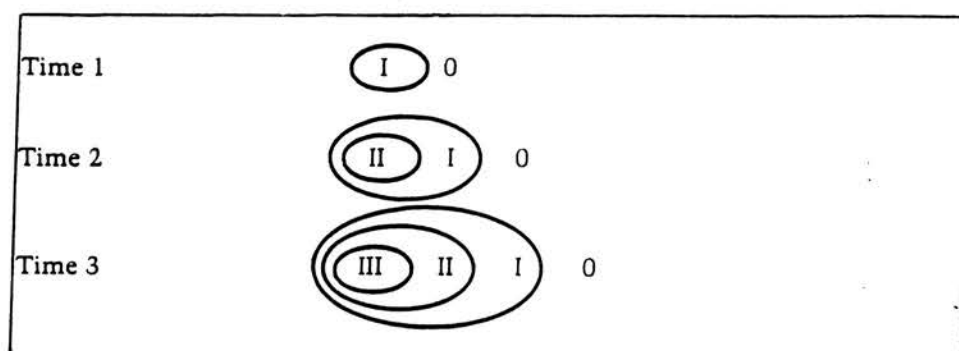


Figure 3.14

(Source: Zobl, 1984a: 161)

In Time 1, change commences variably in environment (X), the most favourable to the change. Variety I has spread and Variety II is now emerging, in Time 2. Now, Variety I is categorical in environment (X), while Variety II is initiated variably in environment (Y). This motion is repeated with Variety III, in Time 3. The model, graphically, captures the following relationship: the most recent innovation (i.e. Variety III) implies what was earlier. It predicts that at Time 3, Variety I will be the most frequent in terms of the environments in which it occurs and frequency of rule application. Also, that Variety III will be the least frequent. As a change is initiated in favourable environments and spreads to less favourable ones, the wave model enables the markedness relation  $III \supset II \supset I$ , i.e. what is less marked is implied by what is more marked (Bailey, 1977) (Cited in

Zobl, 1984a: 164). Markedness theory is reviewed in Section (3.3.6.).

Bailey Wave Model can assimilate categorical, optional and variable rules which are implicationaly ordered. Speech change spreads implicationaly in the form of  $\Sigma$ -curve (refer to Figure 3.15.), as a motion in time and space which has reached some speakers but not others, to cite him:

"the statistical differences among isolects in the middle relative times of the change will be greater than the statistical differences among the early and the late isolects" (Bailey, 1974: 77).

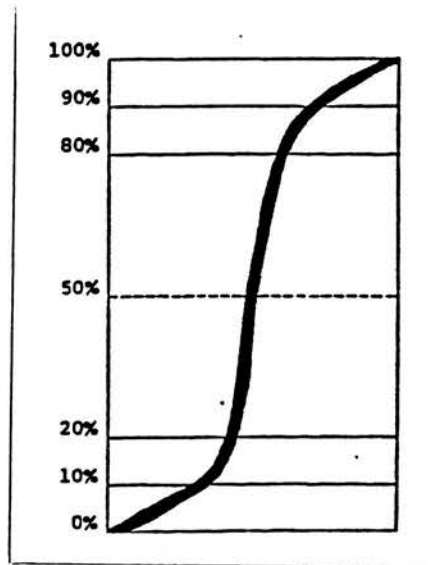


Figure 3.15: The Wave Curve

This is because of the bunching towards either end "incipient changes begin slowly, that after they get going they quickly pick up momentum and that they begin to slow down as they near 100% categoricity" (Bailey, *ibid*: 77), resulting from the changing momentum of change. The wavelike nature of statistics generated when rate is taken into account as shown in the following table:

<u>Locale/Lect</u>	<u>Environment</u>			
	A	B	C	D
0	100	90	80	20
1	90	80	20	10
2	80	20	10	
3	20	10		

Table 3.6: Portrayal of the Wavelike Nature of the Statistics  
(Source: Bailey, 1974: 80)



The value of Bailey's 3 dimensional speech model over variable rules, is demonstrated by Bickerton (1971), who employs an empirical test to analyze models describing inherent speech variation. Bickerton bases his work on data obtained from 28 speakers of the Creole speech continuum in Guyana. He describes the variation in their use of various 'pre-infinitival complementizers' (fi, fu, tu, a, 0) in particular the opposition F/T (fi, fu, tu). Bickerton analyzes their realizations in 3 different sentence constructions which can be derived from various deep structures. On the basis of various models of linguistic variation, (e.g. variable rules; wave model and obligatory rules model), predictions were made about the series of the possible grammars which embrace the variable T/F use of the speakers. A comparison of the different models of linguistic variation in question revealed that Bailey's model was unquestionably superior, on criteria of simplicity and completeness. Because the question is not to predict the maximum number of grammars but only those which are realized and as far as possible all of those (Bickerton 1971: 474-479).

Hyltestam (1977, 1978a) sees his data as a confirmation of the validity of the Baileyan Wave Model and in particular the S-curve for the rate of change in modelling the process of SLA. He found that the greatest progress is made in the initial stages of learning in the syntactic areas studied (see Section 3.3.4.1.).

Zobl (1984a) seeks to ascertain whether the Wave Model of linguistic change can accommodate the observed variation in IL systems. His cross-sectional study is an investigation of the variability in the evolution of the English possessive determiners HIS and HER as acquired by 162 French-speaking adult learners. Zobl's conclusion is "The Wave Model furnishes a valid idealization for acquisitional change" (1984a: 160).

There is, however, one fundamental problem in applying Bailey's Wave Model to the investigation of higher levels of language and to language acquisition. It is primarily based on phonological data. Apart from the still unresolved debate of whether the

mechanisms of phonological and grammatical change are the same, there is a more practical problem. Many of the principles Bailey uses, particularly relating to feature marking, markedness and hierarchies of constraints are not easily transferable to morphological and syntactic features (Borland, 1984). The Wave Model is intended to have predictive power and it appears to have it mostly in phonology. Thus, in SLA research on the syntactic level, Bailey's Wave Model, provides an explanatory, theoretical basis to findings rather than a predictive framework.

#### 3.3.4. Implicational Analysis in SLA Research

It is so aptly stated "to ignore variation is to ignore data that may throw light on the mechanisms of language development" (Hyltenstam 1978a: 2). Implicational scaling in particular is closely related to acquisitional studies in SLA research. Researchers are interested to know which items are acquired first and how they are related implicationally. Scaling learners shows variable performance within a group of learners. Also, implicationally arrayed grammatical categories under study express the notion that the acquisitional process is gradual and though there may be deviation(s), it is systematic, i.e., there is no sudden acquisition of items. These characteristics are schematically shown in Table 3.7.

The Table shows an implicational pattern for Who, Why and Which, which are linguistic contexts. That is Who negative questions are acquired before Why and Which by this group of learners (28 Arabic-speaking learners of English). In this implicational scale (Table 3.7.), subjects like 24, 18 and 28, on the Translation Task, the subjects such as 9 and 29 on the Manipulation Task, show different patterns for the features which are found to be variable in the group. Those subjects do not vary, since subjects 24 and 9 have not acquired the features at all, whereas, subject 28 has acquired the features in question and has used them categorically. On both tasks, subjects like 7, 5 and 4 show variable performances, using the target variant in different degrees, yet in a systematic way, i.e., they use the target form in Who context before Why, Why before Which.

Table 3.7: Negative Wh-Question Formation

<u>Translation</u>				<u>Manipulation</u>			
No	Who	Why	Which	No	Who	Why	Which
24	0	0	0	9	0	0	0
18	-	-	-	18	V	-	-
4	V	-	-	19	+	-	-
19	0	V	-	21	0	V	V
10	V	V	-	4	+	V	V
1	+	V	V	5	+	V	V
3	+	V	V	7	+	V	V
5	+	V	V	10	+	V	V
7	+	V	V	13	+	V	V
8	+	V	V	20	+	V	V
9	+	V	V	22	+	V	V
13	+( $\frac{2}{2}$ )	V	V	23	+	V	V
17	+	V	V	24	+	V	V
20	+	V	V	25	+	V	V
21	+	V	V	26	+	V	V
22	+	V	V	3	+	+	V
23	+	V	V	14	+	+	V
25	+	V	V	15	+	+	V
26	+( $\frac{4}{4}$ )	V	V	2	0	+	+
14	+	+	V	1	+	+	+
15	+	+	V	6	+	+	+
2	+	+	+	8	+	+	+
6	+	+	+	11	+	+	+
11	+	+	+	12	+	+	+
12	+	+	+	16	+	+	+
16	+	+	+	17	+	+	+
27	+	+	+	27	+	+	+
28	+	+	+	28	+	+	+

(+) = + inversion  
+ correct form

0 = no occurrence

(V) = - inversion  
+ correct form

No. = number of subjects

(-) = - inversion  
- correct form

(Source: Al-Bunain 1983: App.4)

#### 3.3.4.1. Hyltenstam's Study

In a series of studies Hyltenstam (1977, 1978a, 1978b, 1981) has concentrated on the acquisition of changes in Swedish word order in the following areas:

- a) sentence negation;
- b) Yes/No question formation;
- c) Wh-question formation in both main and subordinate clauses;
- d) subject-verb inversion in a sentence initial non-subject;

dependent firstly on whether the verb in the sentence contained an auxiliary or was a main verb, and secondly on whether the subject NP was pronominalized or in its full form.

Hyltenstam (1977) reports on the acquisition of Swedish syntax of negative placement in both clause types and in simple Yes/No questions as acquired by 160 adult second language learners of Swedish. Using the developmental continuum framework (refer to Section 3.1.5.2.) and the techniques offered by variability analysis (Implicational Scaling: DeCamp 1971a and b; Bickerton 1975; Variable Rules: Labov 1969), the route of acquisition has been found to be highly regular for the group, independent of differences in background variables of the learners; e.g. length of education and knowledge of foreign languages. Moreover, the route of acquisition has been reported to be the same for learners with different NLs.

The rule of negation that the learners are supposed to learn, simply stated, is that the placement of the negative particle is after the finite verb in main clauses, while it is placed before the finite verb in subordinate clauses in Swedish. Hyltenstam was able to distinguish two major stages in the acquisition of Swedish negation. (i) Non-differentiation between the two clause types, therefore, he posits that the acquisition of negation starts from "the simple undifferentiated point" which seems to be a universal placement of Neg element before the verb: X ..... Neg. .... V (Fin) ... Y.

(ii) Differentiation between the clause types. In this stage

there are 2 substages: a) shifting Neg. and V (Fin) so that the negative now always comes after the verb; b) when the post-verbal Neg. rule becomes categorical, the learners discover that the rule is applicable only to main clauses. In other words, the new environment the learner has to take into account now is whether the clause is main or subordinate. Thus, there is a reversion of Neg. to its former position: pre-verb Neg. in embedded clauses.

Within the two identified stages, in learners who varied their negative placement, a clear implicational pattern emerged. In the non-differentiation stage and in main clauses in the differentiation stage, the auxiliary context was more favoured for the application of the negative placement rule (after the auxiliary or main verb). On the other hand, in subordinate clauses in the differentiation stage, the main verb context was more favoured for the modification of the rule.

Hyltenstam was able to place his subjects on one IL continuum. A continuum of increasing complexity towards the TL norm, with individuals located at different points of the continuum according to their placement of the negator. This continuum represented in Figure 3.16., "in principle describes the developmental sequences of the acquisition of Swedish syntax of negation for individual learners" (Hyltenstam 1977: 403).

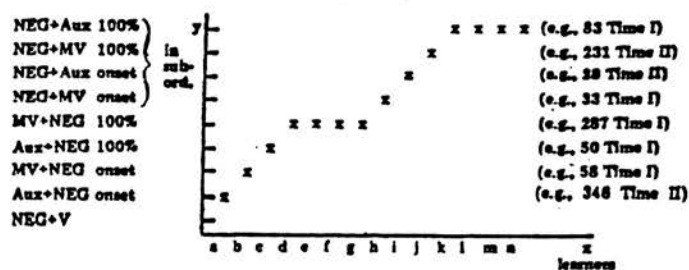


Figure 3.16: The build up of the interlanguage continuum for syntax of negation with Swedish as the target language

(Source: Hyltenstam 1977: 402)

Learners are marked on the X-axis, while the Y-axis is a description of possible placements of negation. Learners at the end of the curve display a pattern which is in agreement with the rules of Swedish, whereas those who have acquired only AUX + NEG are placed at the lower left of the diagram. This continuum of increasing complexity is an accumulation one in that if a learner is placed at a certain point on the X-axis, it means that the pattern indicated there and all those under it, are favoured in his/her IL output, provided that the patterns do not conflict with each other.

As indicated in the diagram, the study combines cross-sectional and longitudinal data. Hyltenstam uses the cross-sectional study at Time I to control the cross-sectional study at Time II and the results of both are compared. When comparing Time I and Time II for the same speaker, Hyltenstam (*ibid.*) observes that "the majority have moved toward the target norm, but there are a few backsliders" (p. 401). However, all learners who change their behaviour from Time I to Time II (whether the change represented progress or regression), keep the same implicational pattern.

In addition to the implicational scaling, two variable rules (Labov, 1969) are formulated to account for the systematic variation of the learners and the sequential route they go through in their acquisition of the rule of Swedish Negative placement. These variable rules are constructed to incorporate the fact that the observed variation is not just "irregular and unpredictable", on the contrary, it is non random and highly regular in character and also constrained by environmental factors. These environmental factors (favourable or unfavourable to the application of the rules) are included.

Though Hyltenstam's work contributes much to the SLA research, there are methodological criticisms of his study. The first, concerns Hyltenstam's (1977, 1978) elicitation technique. This took the form of a discrete point fill-in-the-blanks task in which the learners had to make a choice between placing the word provided in one of the two underlined spaces. The following

example illustrates the point:

ALDRIG	Eva _____	gar _____	pa bio.
(NEVER	Eva _____	goes _____	to the movies)
LASER	_____	Lars _____	tidningen nu.
(READS	_____	Lars _____	the newspaper
			now)
VEM	_____	talar _____	finska?
WHO	_____	talks _____	Finnish?)

(From Hyltenstam 1977: 411)

Clearly, such a task necessarily focusses the learners' attention on form rather than function. More importantly, it allows only a binary choice. The difficulties of designing elicitation tasks which will provide data on all contexts and thereby, circumvent avoidance and other practical problems are always well appreciated, however, one is left wondering whether the regularity of the findings and the very obvious patterns (Figure 3.16. above) in the areas in which they were, partly the result of the very tight technique and restriction on possible realizations imposed by the task.

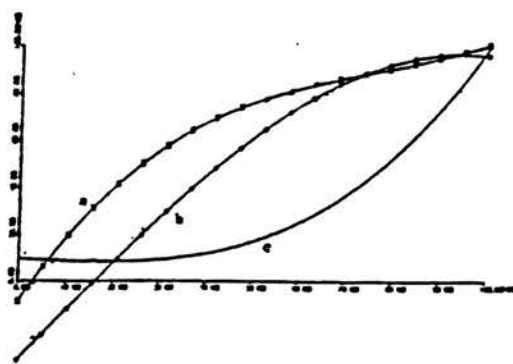
Another criticism is the use of bimodal scaling which does not account for variability that was found for the same speaker who "sometimes places the negative before and sometimes after the finite verb in his attempts to speak Swedish" (Hyltenstam 1977: 384). (This issue will be expanded upon in Sections 3.3.4.2. and 3.3.4.3.).

Hyltenstam (1978b) investigated inversion in Yes/No Questions. As in his (1977) study, he found a favouring of the AUX context over the Main Verb, by learners in the first Non-differentiation stage and for those differentiating in the simple questions. Yet, for learners who differentiated between clause types in embedded sentences, no clear pattern was apparent.

In this study, Hyltenstam used polynomial approximation curves to explore the interrelationship of the acquisition of 3 areas of grammar: post-verbal placement of negation in main clauses, inversion in simple Yes/No questions, and inversion of subject



and verb after a sentence initial non-subject. The development of those areas was linear. Figure (3.17.) below, shows the curves obtained for the three areas in relation to the X-axis which represents the learners' overall development as indicated by these factors combined.



Post-verbal placement of negation (curve marked a.  $r = .70$ ), inversion in yes/no questions (curve marked b.  $r = .81$ ), and inversion after sentence-initial non-subject (curve marked c.  $r = .93$ ) at Time II.  
 $X = \text{post-verbal neg. in main clauses} + \text{inversion in simple yes/no questions} + \text{inversion after sentence-initial non-subjects.}$

Figure 3.17

(Source: Hyltenstam 1978b: 46)

According to Hyltenstam, the interrelationships of these areas are that, with the exception of the very earliest stages, the implicational ordering of the three structures is maintained until a level of approximately 80% is reached for the first two areas (negative placement and Yes/No questions), after which the curves for these two areas meet and follow each other. A much slower development is shown in the inversion after a sentence initial non-subject. However, once it has gained momentum (refer to Bailey's Wave Model: Section 3.3.3.4.) development proceeds rapidly.

#### 3.3.4.2. Andersen's Study

In an attempt to present a "model for dealing with individuals as well as groups, variability as well as systematicity in L2 research" (Andersen 1978: 221), Andersen combines a revised version of the Ordering-Theoretical Method (Dulay & Burt 1974b) with implicational analysis as used in Sociolinguistics. Andersen's data is on the use of 13 grammatical morphemes in

English by 89 Spanish-speaking learners. Following Krashen et al. (1975) and Krashen (1977a), the morphemes are separated into V-related and NP-related<sup>13</sup>; free and bound<sup>14</sup> morphemes. His analysis strongly demonstrates the importance and superiority of implicational scaling both for determining groups of related morphemes and for displaying individual variation.

Andersen (op. cit.) constructs five implicational scales to investigate:

- a) whether the 13 morphemes form a linear implicational series;
- b) whether free morphemes constitute one linear implicational series and bound morphemes another;
- c) whether the morphemes constitute 2 separate implicational series, one for V-related morphemes and one for NP-related morphemes;
- d) whether four valid linear implicational scales are produced by the intersection of free/bound and the V/NP distinction.

When all morphemes were combined in one complex bimodal scale (at 80% criterion for correct use) a significant coefficient of scalability was obtained (Andersen's (1978) Table 7, p. 244). Closer examination of the data enabled him to determine that within this complex implicational scale, certain morphemes do not constitute a linear order in an implicational acquisition, but only a close approximation to a valid implicational matrix. Thus, by dividing the scale into a number of smaller scales, Andersen found that the strongest implicational relationship exists between morphemes which formed natural groups according to (b) and (c) (over 90% conforming to the pattern in each group).

For the last investigation, (d), Andersen was able to demonstrate that the strongest relationship and best individual fit to the implicational pattern were obtained when morphemes were divided

- 
13. V-related morphemes: Cop, Aux, -ing, Past Irregular, Past Regular, Have, 3rd Person Singular; NP-related morphemes: Plural, The, A, O-Article, NsN ('s).
  14. Free morphemes: Any Cop, The, A, O-Article, Past Irregular, Have; Bound morphemes: Plural, -ing, Past Regular, NsN, 3rd Person Singular.

into four morpheme groups (V/NP morphemes and Free/Bound morphemes). This was supported by a very high coefficient of reproducibility,  $r = .98$  (see Table 16 in Andersen 1978: 259).

In Andersen's study, the results substantiate the claim that accuracy orders:

"are the surface manifestation of several underlying dimensions which include syntactic category, morpheme type, frequency in the input, similarity to the L1, syntactic and semantic complexity and perceptual saliency" (Andersen, 1978: 276).

More importantly, this study suggests that whilst there is some relationship between the learning of distinct areas of morphology such that an implicational series can be determined, by far the strongest interrelationship exists between the learning of morpheme sub-groups, which can be considered to be associated linguistically.

Such a finding of this study which looks for systematicity among individuals "correlates significantly with Krashen's (1977) Natural Order, which looks for systematicity among groups" (Andersen, *ibid*: 266). Furthermore it is more consistent with commonsense, since, intuitively, the relationship between learning in different areas of grammar is stronger than the rather simplistic approach of traditional cross-sectional morpheme order studies carried out by Dulay and Burt (1973, 1974); (refer to Section 2.2.2.2., in particular, 2.2.2.2.4.).

An observation to make here, is that Bimodal Scaling (what Andersen used), can obscure serious deviations in the quantitative implication pattern (Fasold: 1970), because it scores only acquired and not acquired categories. Such a scale does not account for strategies like avoidance. Furthermore, it does not account for individuals who vary their performance, (i.e., sometimes correctly supply a category or an item, and sometimes supply the same category incorrectly).

Even Trimodal Scaling can obscure valuable information: the degree of deviation. As Borland (1984) points out, although we

are not provided with all of Andersen's quantitative data, so the extent of such deviations cannot be determined, for the four free, V-related morphemes (Cop, Aux, Past Irregular and Have), for which such a comparison can be made, a greater number of deviations from the pattern are obvious in the quantitative implicational scale, 22 as opposed to 7 in the Bimodal scale (refer to Andersen 1978: 226, Table 3).

It should, also, be noticed that such comparisons between the results using various techniques highlight the rather unsophisticated statistics available for the assessment of the scalability of implicational analysis. The coefficient of reproducibility which is the available statistical test of scalability, takes no account of the severity of deviations and the sensitivity of the scaling method.

#### 3.3.4.3. Platt's Study

Platt (1976, 1977b, 1979) attempts to demonstrate that Singapore English is a creoloid. Platt (1977b) combines five morphemes (2 verbs and three NPs) into an implicational series. The order he obtains is identical to that found by Andersen (1978) for the same morphemes.

As previously mentioned quantitative implicational scaling for the performance of the individual overscores the Bimodal and Trimodal scaling, but it means a more sophisticated and sensitive scaling and hence does not obscure deviations as in the other two implicational scaling. Since Platt (1977) uses the multi-valued scaling, he does not obtain a highly significant scale. A closer examination of his data, however, reveals that if he had employed bimodal or trimodal scaling (with an 80% cut-off = categorical marking), the scalability obtained would have been perfect (as in Andersen's (1978) study).

Platt (1976, 1979) discussed Copula realization in Singapore English. He suggested that one important variable in Singapore English and one which is diagnostic as regards a person's position on the continuum is the occurrence/non occurrence of the

copula in different language background (e.g. Chinese, Tamil, and Malay) and with different educational background (e.g. English medium vs. non-English medium education).

The results revealed that there is quite a strong implicational relationship (the overall scalability is 91.2%) suggesting that categorical copula realization is acquired in the order: Pre-Locative, Pre-V-ing (-ing forms of the verb, e.g. He is working), Pre-Predicative Nominal and Pre-Adjective.

When dividing the speakers into groups according to their educational background, Platt (1979) found that (i) the medium of education (English vs. Chinese /Malay) and (ii) the length of education, seemed to affect the pattern of the speakers. This was also expressed in his (1976) paper "In Singapore English, the environments for copula realization seem to be quite important diagnostically for educational attainment and socioeconomic status" (p. 56). Additionally, Platt concluded that speakers who have 'variable' copula insertion does not necessarily mean that they have 'variable' rules as claimed by Labov (1969). He then suggested that those speakers were in the process of losing a former rule and acquiring a latter one, and alternatively, using the two "quasi-equivalent rules" (Bickerton, 1973).

Implicational Analysis technique was again used by Platt (1977a) in a study of the acquisition of the past tense marking by Singaporeans with different levels of English medium education. For the eight verb types investigated, it was found that past tense marking was highly implicational and scalable. The reported order of favoured environments for the overall group was:

- (1) GET,           (2) BE,           (3) CONSONANT + ED (e.g. wait)
- (4) GO,           (5) HAVE       (6) VOWEL + ED (e.g. try, play),
- (7) VOWEL CHANGE (e.g. break, come)
- (8) CONSONANT + (E)D/T (e.g. pass, bake).

For further analysis, the group was divided into two educational groups:

- 1) those with education above General Certificate Education (GCE) level; (usually obtained after 4 years at secondary school);
- 2) those with education up to or below GCE level.

The same order was obtained with a highly significant scalability in both cases (89.8% and 88.9%) for (1) and (2) respectively. Platt's conclusion is that:

"This would seem to suggest that acquisition of invariant past tense marking for the various verb types does not proceed at an even rate and that acquisition of one type may overtake acquisition of another type" (1977a: 72).

Hyltenstam (1981), Simukoko (1981), Al-Jumaily (1982), Al-Buanain (1983) and Borland (1984) are some implicational studies of the acquisition of SLA, namely syntax. These studies have been undertaken, generally with a high degree of success.

### 3.3.5. Variety Grammar (VG)

The notion of VG is developed by Klein and Dittmar (1979) in order to analyze the transitional grammar of their learners. The researchers draw the data for panel study from the utterances of 60 informants. Forty-eight are Italian and Spanish immigrants to Germany (twenty-four from each language), and the remaining twelve are native working-class speakers of the local German dialect to which the immigrant workers are exposed.

A variety is "more or less stable set of regularities that can be observed in the language use of certain groups of speakers under certain conditions" (Klein and Dittmar, 1979: 22). The linguistic instrument Klein and Dittmar use to describe variability is a context-free grammar which has 101 rules grouped into 15 rule blocks. These 101 rules represent a total grammar to account for all of the varieties. These are not presented in a series of discrete, separate grammatical systems through which the learner moves, but rather in a total grammar space covering all the varieties at once. As they put it:

"A variety grammar is a function from  $\langle\langle P \times A \times T \times S \rangle \times R \rangle$  into the real interval (0,1), where  
 $P = p_1, p_2 \dots p_{n1}$  is a finite set of periods  
 $A = a_1, a_2 \dots a_{n2}$  is a finite set of areas  
 $T = t_1, t_2 \dots t_{n3}$  is a finite set of types of speech situations  
 $S = s_1, s_2 \dots s_{n4}$  is a finite-set of social groups  
 $R = r_1, r_2 \dots r_{n5}$  is an 'overall grammar' with rules  $r_1 \dots r_{n5}$  describing all grammatical regularities within the VARIETY SPACE  $\langle P \times A \times T \times S \rangle$ ."

(Klein and Dittmar 1979: 31)

Acquisition is described as the transition from one grammar to the next. This is done by forming the union of all rules which occur in at least one grammar, then after each interval of time to indicate whether/not the rule occurs. This is represented as:

<u>Months</u>	6	12	18	24	32
<u>Grammar</u>	G1	G2	G3	G4	G5
r1	+	+	+	+	+
r2	-	+	+	+	+
r3	-	+	+	+	+
r4	-	-	+	+	+
r5	+	+	-	+	+
.					
.					
.					
rn	-	-	+	-	+

Table 3.8: A Theoretical Model of Variety Grammar

After six months two rules r1 and r5 have been acquired to form G1. G2 is formed when r2 and r3 are also acquired after twelve months, and so forth.

VG technique has been successfully used to account for the acquisition of pidginized varieties of grammar. The importance of the study is its focus on variation and on the transitory nature of developing grammars. Such a model allows for multiple, co-existing grammars that make up the learners' language.



Klein and Dittmar state that they are investigating ILs or approximative systems (1979: 88). The approximative systems model (Nemser, 1971; Sampson, 1978) suggests that there are successive systems of approximations to the TL (refer to Section 3.1.3.). However, one of the difficulties in using the VG technique emerges from the fact that it is based on the means of the probabilities of rule application for each group. This "tends to obscure 'stages', if they exist" (Sampson, 1982: 173) in the learners' language systems. Moreover, the authors themselves point out that there seems to be a connection between the frequent use of adverbial complexes by the least advanced learners and their non-use of the morphological system of the German verb, (Klein and Dittmar, *ibid*: 135). In other words, temporal and modal relations are expressed through adverbial system in preference to the verb system because the learners do not yet know the morphology of the verb system.

However, learners who perhaps have the same sub-systems (suggesting they are at the same stage in their sequence of approximative systems) are placed in different groups. Three speakers (IT-32, SP-30 and IT-13), for example, are in three different groups. Yet their probabilities of application of verbal group and adverbial complexes and also their absolute scores on these are almost identical (Sampson, 1982). This is the result of using a global score to rank order. Instead the researchers might more profitably have used an alternative technique of grouping which would first have got at factors common to groups of learners and subsequently would have ranked the learners according to their distance from each of these common factors. Learners performing similarly on a group of factors could have been grouped together. Dittmar (1980), therefore, reanalyzes some of these data using an implicational analysis instead. His conclusion is that "ordering adult learners by implicational scales is more satisfying and better than using a cumulative index". The index, a numeral, measures syntactic elaborateness for each speaker (based on a subset of the rules) in the (1979) study.

Whilst some natural relationships in learner-language systems may

have been obscured as the result of weakness in the method of grouping learners, nonetheless, Klein and Dittmar's study remains a pioneering work in SLA research.

### 3.3.6. Markedness Theory

The notion of markedness has been recently suggested for the study of SLA development, whatever the type of acquisition to be investigated. Wode (1984: 12) states that:

"the developmental sequences seem to reflect the internal complexity of the structure or the structural system to be learned, hence the degree of markedness. It seems that the unmarked or the less marked items are learned early, the more marked ones later".

Markedness theory is also suggested as possible explanation for variability phenomenon in IL systems. Zobl (1984a), for example, uses the Wave model and the notion of markedness to account for variability in his data. His conclusion is that:

"The developmental continuum reveals that L2 acquisition appears to involve a greater scope of variability. Change may be initiated in a more marked environment at a point when the rule change process is not yet fully completed in the less marked environment" (Zobl 1984a: 160).

In order to provide the reader with a frame of reference for the markedness concept, the following sections will briefly take up certain issues in connection with this notion.

#### 3.3.6.1. Linguistic Markedness

The elements, structures and subsystems of a language can be regarded as inherently more or less complex than others. This assumption is captured by linguistic notion of markedness. Whilst the idea originated within Prague School of linguistics, it has, recently, become of central importance.

Trubetzkoy (1939) (cited in Pavesi 1984: 151) referred to two members of phonological opposition, one which contained a feature lacking in the other. The phoneme carrying the feature was called marked, the other unmarked. The concept was carried over to inflectional morphology and was later revived within the

transformational generative grammar theory (Chomsky and Halle 1968; Lakoff 1970).

The unmarked member is more basic, the more neutral or central in the oppositions. It is the element which possesses fewer features, conveys less information and thereby is 'included' or 'implied' in the marked member. The marked category is on the other extreme. Markedness phenomenon can interact in a series of opposition chain, in addition to a binary dimension. Thus, a scale of markedness can be obtained. That is, A is the most marked feature or category, B is next, while C is the least marked.

Comrie (1982) relates linguistic markedness to cross-linguistic tendencies. If some property has a significantly greater than chance frequency of occurrence across languages then it is unmarked. Properties not conforming to such tendencies are said to be marked. Applying this conception of markedness to SL leads to the following predictions:

- a. "Less marked properties will be acquired more easily (more specifically, even where the property in question is found in the second language and not in the first)".
- b. "More marked properties will be acquired less easily (more specifically, even where the property in question is found in both native and second languages)".
- c. As a specifically strong case of b, it follows that "properties that are common cross-linguistically (and thus low in markedness) might be acquired easily even where neither native nor second language evinces that property" (Comrie 1982: 6-7).

'Derivational Complexity' (in terms of the number of transformations needed to derive the structure in question), has been proposed as a matrix for syntactic complexity (Brown, 1973, Anderson, 1978). For instance, in morphology to distinguish singular from plural, feminine from masculine, the formers are the marked members, hence more complex. In syntax an additional rule is typically required to derive Negative from Affirmative, Interrogative from Declarative, Passive from Active, etc., where

in each case, the former is the marked/more complex member and hence requires greater cognitive processing time. Therefore, one finds that Yes/No questions are acquired first, because, in neutralization, it would be the declarative and not the interrogative that emerges, since one can ask a question using declarative form, but not utter a declarative using a question form.

Elimination takes the form of selection by the learner of the unmarked member of a redundant pair. This process is similar in pidginization (Ferguson, 1971). The unmarked member is the one which requires less time for cognitive processing. Thus, there is "a general relationship among redundancy, in communication terms, processing difficulty in psychological terms and marking in linguistic terms" (George 1972: 17). The Derivational Complexity, however, has the disadvantage of having to rely on complexity indexes that will vary according to whatever transformational model happens to be selected.

#### 3.3.6.2. Psycholinguistic Markedness

Clark and Clark (1978) propose an accounting of markedness that is bound up with what they perceive as the relationship of language to thought. This relationship they call the complexity principle: "Complexity in thought tends to be reflected in complexity of expression" (p. 230). In turn, complexity of expression can be stated directly in markedness terms (Greenberg, 1966) where 'more complex' is reflected in the addition of features or the addition of rules. Furthermore, researchers' findings in psycholinguistics (e.g. Clark, 1973) show that comprehension of more complex items requires slightly more processing time. This supports the definition of complexity.

To simplify an indepth discussion of the topic (found in Clark and Clark 1977, 1978), we quote "if expression A can neutralize in meaning in contexts that the almost equivalent expression B cannot, then B is more complex than A" (Clark and Clark 1977: 524), in which 'more complex' is thus equated with 'more marked'. It is not difficult to identify such a markedness relationship, in which one member of the pair, but not the other, will always

appear in certain specified contexts (Rutherford, 1982: 87).

Kellerman's (1979) concept of markedness is essentially psycholinguistic rather than linguistic. He views the relationship of markedness to learning difficulty as: the learner has a 'strategy of transfer' in which markedness, in both L1 and L2, plays the following role:

- (1) Where a message (or part of a message) can be equally well expressed by two or more related syntactic structures, the less marked the structure the more likely it will be preferred as the basis for transfer.
- (2) Where one lexical structure (such as a word) can represent two or more related meanings (polysemy), the more marked the meaning the more likely the learner is to avoid that lexical structure (Kellerman, 1979: 38).

Evidence for Kellerman's strategy of transfer has come about through the positing of 3 constraints on the language learning process (Jordens and Kellerman, 1978). First, the learner's perception of typological 'distance' between the NL and the TL: if perceived distance is small (e.g. Dutch vis-à-vis German), the learner will more readily transfer, hence it is claimed, interference errors will be more numerous. However, if perceived distance is large (e.g. Arabic and English), the learner will be less inclined to transfer, and interference errors will be fewer (contrary to the CAH, Section 2.2.1.).

The second constraint is the learner's perception of markedness of a potentially transferable item in his or her NL: the more marked the item the less likely the transfer. According to Jordens and Kellerman (op. cit.), these constraints work together to produce scalar tendencies of transferability, such that heaviest transfer is predicted from the combination of unmarked categories/items and perceived typological propinquity. Lightest transfer, on the other hand, is predicted for the combination of highly marked items and perceived typological distance.

The last constraint is the nature of the learner's knowledge of the TL. The presence of such knowledge, real or assumed on the

part of the learner, will affect transfer in a systematic way.

Markedness for Kellerman therefore has a psychological meaning, in that:

"a structure or meaning will be marked in the NL if there are related syntactic structures which express the same message in psychologically simpler ways, or meanings of the same word or lexical unit which the native speaker considers more central" (Kellerman 1979: 38).

That is, it is based upon assumptions of psychological or perceptual complexity and not of linguistic or formal complexity.

Whilst the two (psychological complexity and linguistic complexity) are not necessarily the same (Fodor & Garrett 1967; Kellerman op. cit.), it is by no means clear how they are related or where one may bring to bear external evidence for drawing distinctions. What appears, however, to distinguish psycholinguistic concepts of markedness from their more linguistic counterparts "is the presence of some substantive assumption about the preferred operating mode of the acquisition faculty" (Zobl, 1983: 294).

For instance, Slobin's (1971, 1973) 'operating principles' for the induction of linguistic structures spell out a number of processing for linguistic data. Slobin (ibid), drawing upon his knowledge of the course of acquisition in different languages has postulated some very likely operating principles which amount to postulation about the effect of various values of the independent variables. Some are listed below (Table 3.9). They can be divided roughly into two groups: (a) Semantic coherence and (b) Surface structure.

Table 3.9: Operating Principles used by Young Children

Semantic Coherence	Surface Structure
i) Look for systematic modification in the forms of words	i) Pay attention to the ends of words
ii) Look for grammatical markers that indicate underlying semantic distinctions clearly and make semantic sense	ii) Pay attention to the order of words, prefixes and suffixes
iii) Avoid exceptions	iii) Avoid interruption or rearrangement of linguistic units

(From Clark and Clark 1977: 340)

In this view, markedness is a function of the degree of compatibility between the preferred operating mode and language data.

Rutherford (1982: 101) points to a potential circularity in the application of psycholinguistic concepts of markedness: Is a certain construction 'marked' because it is 'psycholinguistically complex', or is it the other way round?.

#### 3.3.6.3. Typological Markedness (TM)

Eckman (1977) proposes to revitalize the strong form of the CAH (refer to Section 2.2.1.1.) through the incorporation of Typological Markedness. This is defined as

"A phenomenon A in some language is more marked than B if the presence of A in a language implies the presence of B; but the presence of B does NOT imply the presence of A" (Eckman, *ibid*: 320).

It is argued that Typological Markedness can be determined independently of any particular language and independently of the facts concerning SLA. Additionally, Eckman claims that TM can predict not only areas of difficulty in the TL, but also relative degrees of difficulty. His argument is illustrated by English/German contrastive phonology. English has voiced and unvoiced



obstruents in word-initial, medial and final position, whereas, German has them only initially and medially, voicing being neutralized word-finally.

With respect to the position in which a voice contrast is maintained, Eckman typologized languages as in Table 3.10.

Table 3.10:

Type	Description	Examples
A	Those which maintain a superficial voice contrast in initial, medial and final positions.	English, Arabic Swedish
B	Those which maintain a superficial voice contrast in initial and medial positions, but fail to maintain this contrast in final position.	German, Polish Greek, Japanese Catalan
C	Those which maintain a superficial voice contrast in initial position but fail to maintain this contrast in medial and final positions.	Corsican, Sardinian
D	Those which maintain no voice contrast in initial, medial, or final positions.	Korean

(Source: Eckman 1977: 322)

He argues that from this typology an apparent implicational relationship with respect to where a language maintains a superficial voice contrast, can be obtained. Therefore, the presence of a contrast finally implies a contrast medially, which, in turn, implies a contrast initially. The presence of a voice contrast medially, however, does not imply such a contrast finally, and the presence of a contrast initially does not imply a contrast medially or finally.

Eckman, therefore, proposes a universal voice contrast hierarchy in a manner which can be schematized as:



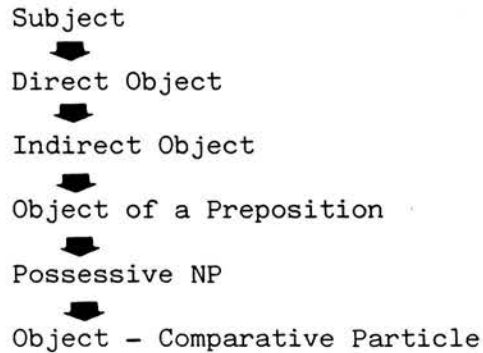
(From Eckman, 1977: 322)

This hierarchy, according to him, is to be interpreted in such a way that maintenance of a superficial voice contrast at any position on this hierarchy necessarily implies the maintenance of that contrast at all higher positions on the hierarchy, but does not imply such a contrast at lower positions.

Thus, unmarked in German SL (neutralization of word-final voiced obstruents) is easier to learn than marked in English SL (voicing contrast in word-final obstruents); hence German speakers learning English have greater difficulty with the English obstruents.

Eckman (ibid.) applies the same principles of difficulty in syntax. According to Keenan and Comrie (1977), degree of difficulty in the learning of English relative clauses by speakers of Arabic, Chinese, Japanese and Persian is accounted for through the markedness relationships of the NP accessibility hierarchy and the various tendencies of those languages to have pronominal traces after relativization. Persians, therefore, have the most difficulty with English relative clauses because in Persian, pronominal traces are obligatory for all relative clause types except (least marked) subject relatives, where they are optional. The other languages display progressively less tendency to require such (marked) traces, and hence their native speakers have progressively less difficulty with English relativization, which prevents any pronominal traces whatsoever.

Figure 3.18: Keenan and Comrie's universal hierarchy of position out of which an NP may be relativized without leaving a pronominal reflex behind



There are certain weaknesses in Eckman's arguments. Kellerman (1979) points out one such weakness concerning the importance of relative clause position with respect to the head noun. Since relative clauses are postnominal in English but prenominal in Chinese and Japanese, the strong form of the CAH would predict learning difficulty for NL speakers of one type trying to learn the other. This argument is consistent with Schachter's (1974) observation that the English relative clauses are a source of difficulty for the Chinese and Japanese learners, so much so in fact that they avoid producing them.

Kean (1984: 7) states that "theories of markedness based on taxonomic approaches to linguistic typology constitute an inadequate basis for any account of L2 acquisition", because "universals should be taken as the corpus to be explained and not as explanations themselves". Greenberg (1966) makes the very same point.

#### 3.3.6.4. Markedness in SLA: Empirical Evidence

A wider role of markedness in SLA has been proposed by Odmark (1979). Assuming that the learner's IL constitutes a set of hypotheses and generalizations concerning the language system of the language the individual is learning then "markedness may be viewed as a subset of the learner's assumptions about this language" (Odmark 1979: 5). Markedness theory is thus being used to gain insights into the kind of order that learners naturally impose upon the language data of their input. Hyltenstam (1978)

uses successfully the markedness hypothesis to explain the development towards a TL and thereby, variability in learners' ILs (refer to Sections 3.1.5.2.2. and 3.3.4.1).

Pavesi (1984) investigates the acquisition of English relative clauses as acquired by Italian speakers in formal and informal settings. Her findings:

"support the general hypothesis that SLA progresses from unmarked to marked both in terms of the order in which the various TL structures are mastered and in terms of the different strategies employed in the process of acquisition" (p. 160).

#### 3.3.6.5. Markedness Theory: Some Reservations

The application of every taxonomic theory of markedness, which has been appealed to in SLA research, has met some success. At present, however, markedness theory alone is incapable of explaining, let alone predicting, a complex phenomenon like SLA. The strongest explanatory power of markedness theory for language acquisition is found at the levels of phonology, morphology and to some extent low-level syntax. Markedness hypothesis is also 'somehow' weakened by the lack of a clearly defined and universally accepted theory of markedness. As indicated above, at least three different approaches are currently used to define markedness. These various approaches, (which can be contradictory), only cover small areas of human languages.

### 3.4. THE PRESENT STATE OF SLA RESEARCH

To review a field of scientific inquiry and criticize its research methodology in isolation would certainly be an artificial exercise (Long and Sato 1984), because researchers do not choose their procedures for collecting and analyzing data in a vacuum. Many of their choices are influenced, if not determined, by the researchers' theoretical orientation. However, regardless of what models or hypotheses of IL one sticks to, an important issue emerges. Whilst linguistic theory and our understanding of cognitive function is so underdeveloped and imprecise, several explanations (based on either theoretical or practical framework)

each claiming 'psychological' validity and superiority cannot readily be appraised and either accepted or discarded.

As more and more thoughtful scholars are realizing, the fact that the central question of acquisition is simply not being answered: How can the learner acquire syntactic and semantic patterns of great arbitrariness and complexity in such a way that they can be used 'creatively' without making errors? This is also the case for L1 acquisition. Cromer (1976: 353), for instance, observes that the concept of 'acquisition strategy':

"has made us aware of some of the ways by which the child may possibly 'get into' the linguistic system. It has shown us the importance of perceptual mechanisms for interpreting utterances, and how as adult speakers with full linguistic competence we nevertheless rely on a number of short cuts of understanding [ ... ]. The concept of language acquisition strategies has told us much - except how the child acquires language."

However, the discussion above shows how the interplay of theory and research contributes to the development of a growing field of investigation. Various valid explanations for language acquisition have been proposed. These include accounts based upon 'built-in-syllabus' (Corder, 1967), 'language as a developmental continuum' (Corder, 1976, 1977b), 'operating principles' (Slobin 1971, 1973), 'NL influence' (proponents of the strong form of CAH), 'derivational complexity' (Brown 1973), 'natural order' (Krashen 1977, 1978), 'universal order' (Wode 1979) and so forth (refer to Spolsky (1984) for a review).

Not surprisingly, when discussing these explanations in depth, one discovers that they are only partially valid. First and foremost, this is due to the fact that human cognition is vast and as yet unfathomably complex. Thus, no solo theory, in particular, where the emphasis falls only within very narrow limits of language acquisition, namely, syntax and phonology, is heuristic enough to account for language acquisition.

Another possible reason for partially valid theories or explanations of SLA is the omission or total neglect of valuable work, if it does not 'fit' within a certain explanation of a

theory. This is due to the fact that there are various explanations, which can be contradictory. Researchers therefore have to select an explanation and stick to it, hence, sometimes, ignore the one contradicting it. As Lightbown (1984: 2) puts it:

"Researchers whose aim is to develop a scientific theory differ with regard to the scientific discipline from which they draw their hypotheses [...]. Naturally the methods used - or preferred - by these researchers differ widely".

Explanations for a very complex phenomenon like language acquisition, are drawn from the following sciences: (see Lightbown 1984 for review):

- (1) linguistics (e.g. Chomsky 1965, 1972, 1981).
- (2) social-psychology: usually measures and compares the performance of learners in groups rather than individuals, seeking to account for differences in outcome by relating them to differences in learning contexts, environments and opportunities. Such analysis can only be carried out with large groups and using properly selected statistical procedures.
- (3) sociolinguistics: systematic variation in IL system is seen as related to the contexts of language acquisition and the contexts in which it is observed (e.g. Klein and Dittmar 1979; Schumann 1978c; and Tarone 1979). The emphasis, here, is on individual's IL rather than the group's.
- (4) neurolinguistics: some researchers seek a scientific theory of SLA from medical research on the brain and its role in language acquisition use (Genesee 1982).
- (5) psychological learning theory: since researchers are more interested in the PROCESS of learning rather than the PRODUCT, some investigators attempt to explain IL phenomenon within psychological theory, particularly in cognitive psychology, where the emphasis is on memory and information processing which are the broader headings under which learning could be classified.

However, it seems that no general scientific theory of SLA would be developed, unless all the above scientific disciplines interact with each other. After all, language acquisition is the interaction of many various factors. This is the reason why all the above theories are ONLY PARTIALLY valid.

Furthermore, when describing the IL of learners an explanation of IL data in terms of an underlying IL system means relating these IL data to psychological rules or mechanisms that are used by the SL learners. By definition IL system is part of developmental process. According to Jordens (1982) the most important criterion by which to judge, the adequacy of an explanation for IL data, is the extent to which linguistic rule mechanisms take into account the psychological processes of elaboration and explanation. In SLA research, therefore, data are, sometimes, described in an interpretative manner.

The problem, however, is that language data is the only product through which the process of SL can be examined. Interpretation has to come up, as language acquisition is not mathematics in which there are clear black or white answers. The attempts of explaining SLA, therefore, are only partially valid, to what are still very open questions tinged with many shades of grey.

The outlook seems to be more promising now as researchers spread out into many various directions: discourse and pragmatics, semantics and functional approaches, language in communication and so forth.

### 3.5. INTEGRATION OF THE PREVIOUS RESEARCH INTO THIS STUDY

Many of the issues raised in the preceding discussions of empirical and theoretical research in SLA are relevant to this study. First, the current theory of the nature and development of the learner's language i.e., IL as a developmental continuum (Section 3.1.5.2.) will provide the framework for the study of developmental sequences (2.2.2.3. above) of the structures under investigation. These developmental sequences are seen as overlapping stages and not as linear or discrete rank-ordered structures as in the earlier MOA studies (2.2.2.2.).

Second, as mentioned in Section 3.4., one theory alone cannot account for such a complex phenomenon as language acquisition. In this study, the approach is therefore eclectic drawing from different theories and models (e.g. linguistic innate hypo-



thesis, psychological learning theory of language learning process, social psychological theory etc.).

Third, variability (3.3. above) over time, i.e. developmental sequence of acquisition, will be accounted for by the implicational scaling technique discussed in Section (3.3.3.). This will also be complemented by synchronic variability as a function of task differences (Section 2.2.2.5.2.). Variable performances at any particular stage due to tasks will be shown by the use of analysis of variance (ANOVA). ANOVA will also be used for distinguishing different groups divided by differences in levels at university.

## CHAPTER FOUR

THE STRUCTURE TO BE INVESTIGATED4.0. INTRODUCTION

Having reviewed the relevant literature, we now turn to the two main structural areas (i.e. negation and interrogation) from which the syntactic features selected for investigation have been drawn. The assumptions underlying the linguistic description of Arabic used in this thesis will be given first. Then the next section will be devoted to a discussion of the structure investigated. A short analysis of the relevant syntactic features in Arabic and English will be made.

4.1. BASIC ASSUMPTIONS: CLASSICAL, STANDARD AND COLLOQUIAL ARABIC4.1.1. Arabic Diglossia

The reader may be aware of the so-called diglossia (Ferguson, 1959) that may confront Arab speakers: the co-existence of what the native philologists call 'Al-arabia Al-fuṣṣḥa' (Classical and Standard Arabic) which is the literary language; and the various Arabic spoken dialects that gradually developed in the different Arab countries. Arabic diglossia is not a new phenomenon. It was observed by Arab and Muslim grammarians and philologists for centuries.

Classical Arabic, the grammar of which is mainly based on the language of the Holy Qura:n, is claimed to have ceased to be a spoken language into which one could be born and brought up from the 4th century A.H. (10th century A.D.) (Aziz, 1968). The development of the various spoken dialects and the 'clear-cut' difference between them and the Classical Arabic is discussed at length in Ibn Khaldun's (1332-1406 A.D.) Muqaddima:

"It should be known that the usual form of address used among the urban and sedentary population is not the old Mudhar language<sup>1</sup> nor the language of this generation. It is another independent language; remote from the language of the Mudhar and from the language of the present day Arabs. [ ... ]. It is obvious that it is an independent language by itself. This fact is attested by the changes it shows, which grammarians consider

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1. What is now known as Classical Arabic.

solecisms" (My translation, emphasis added) (Ibn Khaldu:n 1284 (A.H.): 490).

The reason for changes in the Mudhar language, as explained by Ibn Khaldu:n, is the loss resulting from the contact of Arabs with non-Arabs

"concern for the Mudhar language was only felt when that language became corrupt through contact of [Arabs] with non-Arabs, at the time when the Arabs gained control of the provinces of Iraq, Al-Sham [..... thus Mudhar language ] changes into a different language" (Ibn Khaldu:n 1958: 351).

However, since it is the language of the Holy Qura:n and of the Prophetical traditions, which are the basis of Islam, it was feared that, as a result of the disappearance of the language, in which they were revealed, they themselves might be forgotten and no longer be understood. Therefore, a systematic treatment of its laws, a presentation of the analogical formations used in it and the derivation of its rules were needed (Ibn Khaldu:n 1900: 546-559). Hence, the knowledge of Classical Arabic became a discipline known by heart and fixed in writing. Ibn Khaldu:n, therefore, points out that the /malakah/<sup>2</sup> (internal capacity/tendency) of Mudhar language is different from Arabic philology. The latter is a knowledge of a quality and not a quality itself<sup>3</sup> (Ibn Khaldu:n: *ibid*).

Numerous studies have dealt with Arabic diglossia from different perspectives: linguistic, nationalistic, literary and educational. Altoma (1969), for instance, reports different philological and literary studies that date back to the ninth century. He notes that the majority of these studies are normative in approach, motivated by contrastive attitudes and beliefs regarding the study of Colloquial Arabic at the expense of Classical Arabic.

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2. It should be pointed out that /malakah/ has been interpreted as habit, by Franz Rosenthal (1958). This seems to be a rather unfortunate interpretation.

3. Nowadays, a similar view is expressed in Krashen's Learning/Acquisition hypothesis (Section 3.2.1.1.).

The Arab world has experienced long and heated debates with regard to the use of Classical and Colloquial Arabic. Two views that pertain to this issue can be noted: (1) the first, on the one hand, shows the Colloquial as an outcome of illiteracy or as a corrupted form which deviates from the Classical. In this tradition Taha Hussein (1954: 86) writes:

"The Colloquial lacks the qualities to make it worthy of the name of a language. I look upon it as a dialect that has become corrupted in many respects. It might disappear, as it were, into the Classical if we devoted the necessary effort on the one hand to elevate the cultural level of the people and on the other to simplify and reform the Classical so that the two meet at a common point".

It is clear here that Hussein, one of the leading protagonists of this view, feels that the Classical can and should replace the Colloquial in all functions of life. (2) The second, on the other hand, recognizes the presence of a wide rift between two forms, i.e. the Classical and the Colloquial. The protagonists of this view propose two different approaches toward eliminating or at least lessening such a gap: (a) the first approach calls for the use of the Colloquial for all functions; whereas (b) the second, calls for a gradual modification of the grammatical and semantic rules of the Classical so as to help introduce certain Colloquial features into the Classical.

It should be noted here, however, that in spite of the different approaches to bridge the gap between the Classical and the Colloquial, the prevailing attitude in the Arab world is obvious; the overwhelming sentiment has been and continues to be that if there is to be an accommodation between Classical and Colloquial, it is the latter that must be altered. The idea of elevating Colloquial Arabic for use in writing purposes instead of the Classical was ill-received in the Arab world, partly for political reasons, partly for literary reasons, as well as because of the belief that Colloquial Arabic is a corrupted form of 'true' Arabic, and mostly because Classical Arabic is the language of the holy Qura:n.

#### 4.1.2. Arabic Triglossia

Other scholars implied (e.g. Gaber, 1966), or simply stated (e.g. Chejne, 1969) that the language situation in the Arab world is characterized by the existence of three different norms of Arabic.

Chejne (ibid) divided these norms of Arabic into:

- (a) Traditional Classical Arabic (TCA), which is represented by pre-Islamic poetry and by the Holy Qura:n. This variety is manifested in a rich body of literature. TCA was also later standardized and elevated to a prominent position which was used as a prestige differentiation for its users.
- (b) Modern Standard Arabic (MSA) that prevails in all of the Arabic speaking countries. This variety is basically dependent on traditional Classical Arabic in that it employs a similar grammar, in morphology and syntax. This variety varies from TCA in its employment of new lexicons as an answer to the modern scientific development as a result of the contact between the Arabic and Western civilizations.
- (c) The third norm of Arabic is what has been generally stated in the literature as regional or socio-economic dialects which are employed throughout the Arabic speaking population. On the phonological level, each of these dialects is characterized by certain features which set it apart from other dialects in the Arabic countries. These dialects manifest a wide range of differentiation in the realm of lexicons.

#### 4.1.3. Similarities and Differences among the Three Norms of Arabic

What distinguishes SA from the Classical language of Arabic is a matter of vocabulary and style (Chejne 1969; Kenway 1982; and Thalji, 1982). However, in morphology and syntax, there are strong bonds of continuity with the Holy Qura:n taken as the acme of perfection. As AL-Sweel (1983: 10) puts it:

"The written form of the language has scarcely changed since the emergence of Islam. A fact attributed to the holy Qura:n which is considered as the reference of linguistic and literary studies for over fourteen centuries. The only exception to this generalization is the vocabulary which did change quite notably over the years". (Similar views are expressed by Bakir 1981: 3; AL-Johani 1982: 7).

On the other hand, SA is distinguished from the various

colloquials or 'vernaculars' in: (i) phonology, since phonology often reflects the influence of the phonological system of the speaker's native dialect, both in segmental as well as in supersegmental features (Harrell 1957); (ii) grammar; (iii) lexicon; and (iv) function (Altoma 1974). The colloquials are used as the medium of communication of everyday life, but are infrequently written. The opposite is true to SA (Ferguson 1959; Altoma 1969).

#### 4.1.4. Diglossia, Triglossia or a Continuum?

To go back to the above mentioned diglossia phenomenon, there are Arab grammarians and linguists who view the situation of Arabic not as a mere diglossic or triglossic situation:

"but as a spectrum or better still a continuum which has at one extreme the purest Classical Arabic and at the other, the purest type of colloquial Arabic" (Bakalla 1984: 87; the very same view is expressed by Gaber 1966:1)

Schematically, this idea can be represented as:

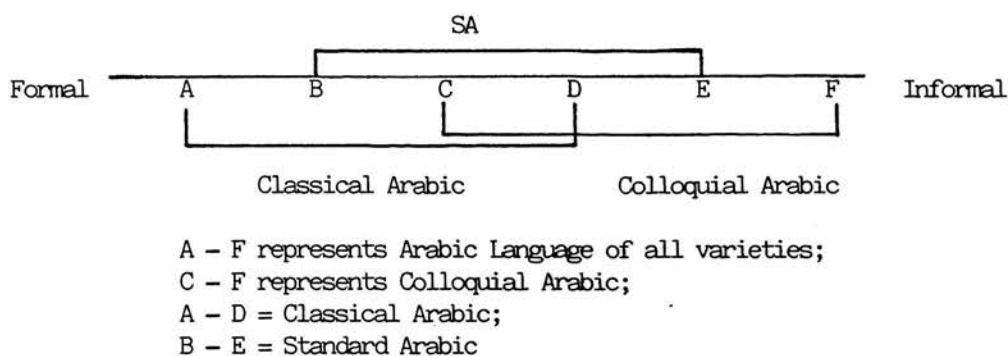


Figure 4.1.

(Adapted from Gaber 1966: 2)

Along this continuum of Arabic Language, we have moving points which create this situation of gradedness and the obscurity of the demarcation line between the colloquials. The points B and D are not fixed points. The point D may move to the right covering more of the portion shared by both SA and Colloquial Arabic; or it may move to the left, may be as far as point B, where the style is then recognized as highly Classical. Thus, we find varieties of Arabic which are either relatively closer to

Classical or Colloquial Arabic (this is clearer on the lexical level). Also, criss-crossing this continuum are the various social and professional jargons or sub-dialects. That is, Colloquial Arabic "varies not only from one country to another, but also from one area to another within each country" (Bakalla 1984: 85).

Altoma (1974: 4) accepts the presence of a 'middle language' /al luqhah al wuṣṭa/ which is "described as a result of Classical and Colloquial fusion". He also adds: "The basic features of this middle language are predominantly Colloquial, but they reveal a noticeable degree of Classical especially in the use of lexical items". This 'middle language' is used by educated Arabs (Mitchell 1980: 89).

Chejne (1969) believes that, in spite of the wide gap that differentiates CA from Colloquial Arabic, a new progressive trend towards bridging this gap is being manifested in the promotion of a new standard Arabic. This comes as no surprise since it is a result of the spread of literacy in the Arab world, the invention of printing and the extensive contact among the Arabs themselves in the different Arab countries.

In a study entitled "Diglossia in Arabic: Investigating Solutions", Zughouli (1980: 201-217) reports the existence of four "varieties" in the Arab world: 1) Fuṣṣḥa Arabic usually called Classical Arabic; 2) Colloquial Arabic; 3) Educated Arabic; and 4) Modern Standard Arabic. He places the latter two varieties on a continuum between Fuṣṣḥa and Colloquial with Educated Arabic in the middle and Modern Standard Arabic close to Fuṣṣḥa. He, then, describes certain features that are characteristics of each variety in order to substantiate the differences among these varieties.

It seems to me that viewing the situation of Arabic as a continuum expresses the situation of Arabic more accurately than does diglossia. As Bakalla neatly puts it:



"Diglossia normally involves a two poles system, in which each pole stands on its own and does not contribute to the other in any significant way. But this is not the exact linguistic picture of Arabic-speaking world. It is true that Classical Arabic, in the sense of living Standard Arabic, has the most prestigious place, and dialect is looked down upon by the educated Arabs who use it in day to day affairs and non-official situations. But throughout the ages, there has been another variety of Arabic which comes between these two varieties. [... known as common or middle Arabic.] This variety is based mainly on Classical Arabic but it is influenced by the dialectal environment to a lesser or greater degree". (Bakalla 1984: 87).

#### 4.1.5. The Language used in this Study

In this study, the language under discussion is Standard Arabic, which is widely used as a lingua franca among the Arab nations to preserve unity in the Islamic faith and pan-Arab interests. SA refers to that uniform variety of Arabic which is used all over the Arab world as the usual medium of written communication in contemporary books, periodicals, magazines, newspapers, business and personal letters. SA is also used as the medium of oral communication in more functionally restricted areas, as in religious ceremonies (along with Classical Arabic), formal speeches, public and university lectures, learned debates; in radio and television broadcasts, especially in commentary and news programmes; on the stage, in some songs, and, in general, in rather formal or solemn occasions.

The reason for choosing this form of the language is that it is the variety which is not only known in the Arab world, but is also familiar outside the Arab countries, whereas the use of other varieties are restricted only in different Arab communities as their local dialects. Another reason is that SA is more highly standardized than the dialects of the language, which makes it a more convenient subject of scientific analysis. Above all, SA is the only variety that the learners are taught (as a foreign language) at schools and universities. Furthermore, the tasks (see Chapter 5 and Appendix 1) are written and not spoken. Usually, it is SA which is used in written material and not the dialect.

SA has been given various labels by different writers educated in the European tradition; e.g. Modern Standard Arabic (Gaber, 1966; Abdel Hamid, 1972); Modern Written Arabic (Thalji 1982). Other labels have also been used, these include: Contemporary Arabic, Modern Literary Arabic, Contemporary Standard Arabic and so forth. All of which are different versions of the same thing. The label SA is perhaps the most realistic and acceptable one. It, on the one hand, can not be associated with a particular historical period such as 'Classical', 'Contemporary' or 'Modern' and on the other, it may not be associated with geographical or typological identities such as 'eastern', 'western', 'written' or 'literary'.

#### 4.2. DISCUSSION ON THE STRUCTURES INVESTIGATED

The purpose of this Section is to present an analysis of the structures under investigation and to pin point areas we shall be studying, since we can not in any way set out to exhaust the complexity of the structures. In addition, the analysis of the structures are used to provide the framework for the design of the elicitation tasks used in this study (Chapter 5).

##### 4.2.1. Phonological Hints and Transcription

It should be noted here that this study deals mainly with written English and written Arabic. Since, Arabic and English orthography does not systematically indicate stress and/or most intonational phenomena, these features of both languages will not be dealt with unless required by the need for distinguishing between certain structures which can not otherwise be distinguished.

The Arabic phonological system consists of 28 consonants and 6 vowels. The following phonological transcription will be used in this study:

<u>Consonants</u>	<u>Description</u>
b	voiced bilabial stop
t	voiceless alveolar stop
t̤	voiceless 'emphatic' alveolar stop
d	voiced alveolar stop
d̤	voiced 'emphatic' alveolar fricative
k	voiceless velar stop
q	voiceless uvular stop
ʔ	glottal stop
j	voiced palato-alveolar affricate
ʕ	voiced pharyngeal fricative
f	voiceless labiodental fricative
θ	voiceless dental fricative
ð	voiced dental fricative
ð̤	voiced 'emphatic' dental fricative
s	voiceless alveolar fricative
s̤	voiceless 'emphatic' alveolar fricative
z	voiced alveolar fricative
ʃ	voiceless alveolar fricative
x	voiceless uvular fricative
ɣ	voiced uvular fricative
ħ	voiceless pharyngeal fricative
h	voiceless laryngeal fricative
r	alveolar trill
l	lateral alveolar
m	bilabial nasal
n	alveolar nasal
w	bilabial approximant
y	palatal approximant
<u>Vowels</u>	
<u>Short</u>	<u>Long</u>
i	i: front unrounded
a	a: central unrounded
u	u: back rounded

- 
4. Al-Ani (1970) classifies /ʕ/ as a voiced pharyngeal stop.

Vowel length is phonemic in Arabic: i.e., it is distinctive in terms of minimal pairs in: /nada:/ (dew) vs. /na:da:/ (shouted) /yaksiruh/ (he breaks it) vs. /yaksiru:h/ (they break it). The actual realization of these phonemes, however, is determined by the phonetic environment which means that every phoneme has various allophones (Al-Ani 1970; Kebbe 1979).

This study, however, does not aim at discussing the various phonetic changes which affect the actual realization of phonemes. We will therefore, commit ourselves to the phonetic distinctions that influence the grammar, and side step the phonetic and extra-linguistic elements which operate within the language. Thus in Section 4.2.2. we set out the grammatical description of Arabic categories on which the analysis in this thesis is based.

#### 4.2.2. Parts of Speech

Arab grammarians recognize three parts of speech: Nouns, Verbs and Particles.

##### 4.2.2.1. Nouns

Medieval Arab grammarians classified the category of Noun into two sub-categories: Primitive and Derived Nouns. Primitive Nouns, on the one hand, are those that cannot be derived from any verbal root; e.g. /walad/ (boy). Arab grammarians declare that a primitive noun refers to 'a body'; i.e. physical entity. A primitive noun, therefore, is a 'substantive' in the Latin sense, denoting an object that has substance. Primitive nouns, parallel to verbs, followed certain canonical forms called 'al-awza:n' (measures), in traditional Arabic grammar. Yet, there are other primitive nouns that follow no rule, especially nouns of a non-Arabic origin.

Derived nouns, on the other hand, are accounted for by *alqya:s* (i.e. derivation by analogy). They include two sub-parts: (1) Deverbals: nouns derived from verbs. Arab grammarians, usually, list 11 types of Deverbal nouns. (2) Denominals: nouns that are derived from other nouns. They fall into seven classes. Examples of the Derived nouns are illustrated in the following table:

Table 4.1.:

Derived Nouns	
Deverbals	Denominal
1. noun of unit e.g. <i>ṭarqah</i> (one knock)	1. nouns that denote the individual e.g. <i>bint</i> (a girl) <i>banat</i> (girls)
2. noun of kind /manner/ fashion e.g. <i>rikbah</i> (mode/style of riding)	2. noun of abundance (this type resemble the locative nouns) e.g. <i>/malḥamah/</i> from <i>/laḥim/</i> (meat)
3. noun of patient (i.e. deputy object) e.g. <i>maqtul</i> (murdered)	3. noun denoting the vessel which contains anything e.g. <i>/maḥbarah/</i> from <i>/ḥibr/</i> (ink)
4. noun of agent (i.e. deputy subject) e.g. <i>ṭalib</i> (student)	4. noun of relations: denote that person or thing belongs to or is connected with words of birth, trade, origin, etc. e.g. <i>Qatari</i> <i>qaṣaʿi</i> : from <i>qisāḥ</i>  (narrative) (narrative) an adj. a noun
5. noun of action e.g. <i>mula:kamah</i> (boxing)	5. abstract nouns of quality e.g. <i>/ilu:hiyyah/</i> (Deity) <i>/ulu:hiyyah/</i>
6. noun of quality: this type of noun is described as "the attribute resembling the agent" e.g. <i>jaw'a:n</i> (hungry)	6. the diminutive noun (used to express endearment or contempt or enhancement) e.g. <i>/musayjed/</i> (a small mosque). From <i>/masjed/</i> (a mosque).
7. noun of instrument e.g. <i>miftaḥ</i> (key)	7. nouns that denote the manner of somebody or something e.g. <i>/kari:m/</i> (generous)
8. noun of colour or defect e.g. <i>aḥmar</i> (red) <i>iḥmarra</i> (turned-red)	
9. noun of superiority and excess (this is similar to the English comparative and superlative) e.g. <i>/ʔakram/</i> (more generous)	
10. noun of time e.g. <i>maḡrib</i> (evening)	
11. noun of place e.g. <i>/mal'ab/</i> (playground)	

Thus, according to the above classification, noun category include pronouns, numerals, adjectives and substantives (denoting a concrete noun in the Latin sense and/or an attributive adjec-

tive). The adjectives and substantives are distinguished only by context; i.e. they are morphologically identical but have different distribution and are functionally differentiated. Pronouns are not inflected; they are not included under the Particles, because pronouns are substitute for inflected nouns. Numerals oscillate between the substantives and the adjectives. Moreover, adverbs and prepositions are frequently ordinary fully inflected nouns with an auxiliary function. The interjection is sometimes in the form of a noun, but is not a noun in meaning or in syntactic function.

However, we shall not deal with all the above grammatical facts of Arabic, rather the discussion involves only those relevant to our investigation.

#### 4.2.2.1.1. Adjectives

Arab grammarians define an adjective as that word which qualifies or describes a head noun, denoting a quality, inherent or accidental, permanent or transitory, of physical deformity or defect or of colour. They set up four measures according to which an adjective can be derived from a neuter intransitive verb. Adjective phrases whether immediately dominated by Sentence or by NP, must show agreement or concord with the NP they qualify. This includes number, gender as well as case marking (refer to Section 4.2.3.1.). Additionally, adjectives marked (+ definite) readily suggest that they are constituents of NP's rather than S's. Thus, for example, /al-bab al-maftu:h/ (the opened door) is a questionable and ungrammatical sentence, suggesting that an obligatory constituent is missing from the surface structure. It cannot, therefore, be considered as a full sentence, instead, such structures are seen as if they were headings or titles. This is contrary to adjectives forming constituents of S's; e.g. /al-bab maftu:h/ (-def.). In brief, the two uses of adjectives can be accounted for in the deep structure. An adjective forming a constituent of S should always be (-def.), while it may be (+ def.) when it is a constituent of NP.

#### 4.2.2.1.2. Adverbs

This sub-category is expanded into various types of adverbials such as: Time; Locative; Manner; Reason and so forth. Arabic, however, does not have an adverbial suffix comparable to English -ly. What functions in Arabic as the adverb is what is termed by traditional grammar as /al-ḥa:l/ (lit. condition). This is usually translated as "adverb of circumstance". It refers to a class of participles which describes the condition or the state of the NP, they modify. Morphologically an 'adverb of circumstance' is either a Noun or an Adjective which always occurs with an accusative ending.<sup>5</sup>

#### 4.2.2.2. Verbs

Arabic verbs are of two kinds: strong and weak. Strong verbs are those of which all the radical letters are strong and consequently neither undergo any change, nor rejected in any of the inflexions but are retained throughout. The latter kind includes verbs that contain one of the three letters /w/ or /y/ or /a/.

Verb forms, as nouns, are derivationally related to the lexical root, which is a word-frame of three-five consonants. The overwhelming majority of roots, however, are trilateral; (i.e. each root consists of three consonants, e.g., the basic meaning for studying is given by three consonants /drs/ and the basic meaning for understanding is /fhm/). There are fifteen forms of the trilateral verbs only (Wright 1896: 29-46). Lexical entries in an Arabic dictionary commonly consist of the lexical root, followed by its verbal and nominal derivations. The simplest form of an Arabic verb is the 3rd person masculine singular of the perfect.

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5. The Accusative case denotes items that may occur in position X in the surface structure ( NP - X - Y ), where X may be realized as an Adj or NP.



There are three elements included in Arabic word-formation: root; vocalization; and affixation (prefixes, suffixes and infixes). Travis (1979: 2) relates the unique feature of word formation in Arabic to its "discontinuous affixes". Not surprisingly, therefore, Stetkevych (1970: 12) mentions that an Egyptian engineer has found it possible to derive 196 terms for the field of metallurgy from the root /ṣhr/ (liquify, melt, fuse).

#### 4.2.2.3. Particles

Traditionally, particles are subclassed according to their functions. Thus, this category includes prepositions (e.g. /fi:/ (in); /min/ (from); /ʔila:/ (to); conjunctions (e.g. /ʔana/ (that) ); interrogative particles (e.g. /ʔa/; /hal/ ) and negative particles (e.g. /lam; lan; la:/). They are words which are uninflected.

#### 4.2.3. Some Comments on Morphology

##### 4.2.3.1. Inflection

Arabic is a heavily inflected language. The Arabic verb, for example, inflects for Aspect, Mood, Voice, Person, Number and Gender. The root /drs/ is given as an example to see how the verb exhibits these six categories.

1. Aspect:           + Perfect: /darasa/ (he studied)  
                          - Perfect: /yadrusu/ (he is studying)/(he studies)
  
2. Mood:           Indicative: /yadrusu/ (he is studying)  
                          Subjunctive: /yadrusa/ that (he may study)  
                          Jussive: /yadrus/ (let him study)  
                          Imperative: /ʔadrus/ (study)
  
3. Voice:           Active: (all the examples above)  
                          Passive: + perfect: /durisa/ (it has been studied)  
                                      - perfect: /yudrasu/ (it is being studied)

It should be pointed out here, that these examples are vocalized forms in Arabic; i.e. internal passive. However, there are other forms which may have passive

meanings and may be used for the passive. The latter forms are 'middle' verbs, what Arab grammarians call "verbs of leniency"; e.g. /ʔinjaraha/ (he was injured).

4. Person:      1st: /darasttu/ (I have studied)  
                      (masculine) 2nd: /darasta/ (you have studied)  
                      3rd: /darasa/ (he has studied)
  
5. Gender:      M: /darasa/ (he has studied)  
                      F: /darasat/ (she has studied)
  
6. Number:      sing. /darasta/ (you (M) have studied)  
                      dual /darastuma/ (you (M + M/ M + F/ F + F) have studied)  
                      plural /darastum/ (you (M) have studied)  
    /darastumna/ (you (F) have studied)

Arabic nouns are, also, marked for case, gender and number. Consider the following table (4.2.) which represents the noun/mudarris/ (teacher).

Table 4.2.

Number	Gender	Case		
		Nominative	Accusative	Genitive
singular	M	mudarriss <u>un</u>	mudarriss <u>an</u>	mudarriss <u>in</u>
	F	mudarrissat <u>un</u>	mudarrissat <u>an</u>	mudarrissat <u>in</u>
dual	M	mudarriss <u>an</u>	mudarriss <u>ain</u>	mudarriss <u>aini</u>
	F	mudarrissat <u>a:n</u>	mudarrissat <u>a:n</u>	mudarrissat <u>aini</u>
plural	M	mudarrissu: <u>n</u>	mudarrissi: <u>n</u>	mudarrissi: <u>n</u>
	F	mudarrissa: <u>tun</u>	mudarrissa: <u>tin</u>	mudarrissa: <u>tin</u>

#### 4.2.3.2. Plural

Plural with the suffix /u:n/ and /i:n/ (refer to Table 4.2. above) is known as 'sound plurals'; whereas other nouns e.g. /'alam/ (flag) cannot take these suffixes to form their plurals and they show idiosyncratic behaviour in their inflections:

/?'la:mun/, ?'la:man/ and /?'la:min/ (flags). Such nouns with 'broken plurals' take the same suffixes in the dual (M) as sound plurals, so we have /'alamyni/ (2 flags, accusative and genitive); and /'alama:n/ (2 flags nominative). Sound plurals are formed by adding the appropriate suffixes to the root which remains unchanged. Yet, this is not the case with broken plurals since the vowels change in the root of their singular nouns; e.g. /qalam/ (a pen) /aqla:m/ (pens); /madrasah/ (a school); /mada:rris/ (schools).

#### 4.2.3.3. Definiteness

Definiteness is expressed by the prefix /?al/ (the) affixed to the nouns and adjectives. There is no indefinite article. Without the definite article, the noun is usually indefinite; e.g. /kita:b/ (a book); / ?al-kita:b/ (the book). /?al/ Phrase has three distinguishable functions:

- (a) Particularization: in which the article is prefixed to singular or plural nouns and refers to a particular individual.
- (b) Generalization: in which the "generic article" is prefixed to genus.
- (c) Relativization: here the relative pronoun is prefixed to participles.

(More details of definiteness and indefiniteness in Arabic is to be found in Kenway 1982).

It is clear from the available literature, that the articles in English and Arabic have always been a source of difficulty, especially for the foreign learners of these languages. Although they are among the most frequently occurring morphemes, the articles are among the last elements of syntax to be acquired by SL learners. Mastering their usage correlates with high proficiency in other language skills.

#### 4.2.4. Modals and Auxiliaries

4.2.4.1. Modals: Modals in English show several characteristics that help separate them as a class: (a) they do not occur without

a MV (a MV is present in complete answers to interrogatives, but can be, and often is, optionally, deleted especially in speech; e.g. Can you do it? Yes (I can (do it))); (b) they show no third person inflection (-s) in present tense and they have no -ed or -en (participle) forms. Lastly, (c) the modals system is characterized by fewer options than those which exist in the full chronological system of the English verbs (Diver 1964).

Two 'systems': a chronological and hypothetical one can be established in English on the basis of the presence or absence of time distinction in the modals (Diver, 1963). The hypothetical system contains a number of internal oppositions that share the meaning 'hypothetical'. Another classification to account for modals is Epistemic (Verdictive) /Deontic (Directive) distinction (Mitchell 1974; Lyons 1977; Cook 1978). The former deals with the truth value of the sentence; whereas the latter deals with permission, obligation and ability.

As for Arabic, no category corresponding to the English modals has been recognized in previous treatments of Arabic. Snow (1965), in his unpublished thesis, sets up a subcategory of intransitive verbs e.g. /'asa:, yumkin, yalzam, yanbaghi:, yajib/ (wish, can, must, should/must, must) with the characteristic of taking an /?ana/ (that) clause as subject and the optional presence of an adverb of interest (pp 32-33). Abdel-Hamid (1972) added to those /yaşuḥ, yaju:za/ (it is permitted, possible), /yataḥatem, yatayaqqan/ (it is incumbent upon), /qad/ (it is possible) etc.

Semantically, these Arabic forms express as do their English counterparts a 'hypothetical' dimension and express the attitude of the speaker /writer towards the predication about whose occurrence there is some question. Syntactically, some are verbs (e.g. /yajib, yalzam/ etc.), which must be followed by /ana/ clause. They also, generally, lack inflection as opposed to 'full' verbs. The others, for example, /qad, rubbama/ (may be) are particles. Some of these particles; e.g. /ḥata, kai:, likai:, li-/ (in order to, so 'that) are, morphologically, a

heterogeneous set. Semantically, however, they express modality. Additionally, they are a closed class just as the English modals are.

In this investigation, we have concentrated on the modal auxiliaries can, shall, will and their past tense forms : could, should, would. The scope of this study is limited to the use of modal auxiliaries in Negation and Interrogation, the other uses and meanings underlying modal auxiliaries are excluded. Most of the modal verbs are plurifunctional in nature and this plurifunctional pattern is analyzed here in terms of the 'hypothetical/chronological' classification. The modal verbs and their meanings that are examined are as follows:

#### Will and Shall

In general, chronological Will and Shall correspond to the Arabic preverbal particles /sawfa or sa-/ which indicate futurity + the imperfect, e.g.

/ { sawfa } tuqabluhu ghadan /  
           sa-  
 will you meet him tomorrow. (You will meet him tomorrow)

#### Would and Should

The chronological uses of Should are similar to those of Would. After a verb of reporting in the past tense Should replaces Shall, while Will is replaced by Would. This corresponds with the Arabic:

{ sawfa } + ( + V )    OR    { kana } + sa- ( + V )  
           sa-    ( + Imperfect )                    ( + perfect )                    ( + imperfect )

#### Can

Can uses , primarily, belong to the hypothetical system: Can + V may denote the 'ability to know how'. "The most familiar use of Can (and one the grammarians often regard as basic) is to express ability to do something" (Palmer 1965: 116). No time adverbials indicating future time are used with Can to refer to the future. The corresponding Arabic structures are:

$$\left\{ \begin{array}{l} /yaṣtati:/ \\ /yumkin/ \end{array} \right\} + /ʔan/ + \left( \begin{array}{l} V \\ \text{(that)} \end{array} \right) + \text{subjunctive} \quad \text{OR} \quad \text{fi} + \left\{ \begin{array}{l} ʔistita:ah \\ ʔmkan \end{array} \right\} + \text{Pronoun} + /ʔan/ + \left( \begin{array}{l} V \\ \text{+sub.} \end{array} \right)$$

Can may indicate a request; e.g. Can you help me tomorrow? The Arabic structures corresponding to this use of Can are questions which include verbs that indicate ability, power, possibility, for example, /yumkin, yaṣtati:/, min al-mumkin / (it is possible).

Possibility is another use of Can, especially, in questions and negatives. In this case Can could be replaced by May, with the exception of questions like: Can he be hiding? \* May he be hiding? The Arabic equivalent structures are

$$\left\{ \begin{array}{l} /qad/ \\ /rubama/ \end{array} \right\} + \left( \begin{array}{l} V \\ \text{+ imperfect} \end{array} \right)$$

#### Could

Chronological Could includes its uses as the past tense of Can in reported speech and the indication or ability of knowing how in the past. In Arabic, reported speech requires no change in the form of the verb similar to that required in English. It is formed by the verb /qa:la/ (to say) in the Perfect + /ʔana/ clause. For the expression of ability or knowing how in the past:

$$/kana/ + \text{Pro.} + \left\{ \begin{array}{l} /yaṣtati:/ \\ /bi-ʔistita:'at/ \end{array} \right\} + /ʔana/ \text{ clause is used.}$$

Hypothetical Could + V may express non past requests, but in a less formal and more familiar manner to those expressed by Can. This use is similar to that with Can in Arabic. It should be pointed out that the expression of politeness in Arabic is basically not grammatically encoded and has to be expressed periphrastically through expressions like /law samaḥt/; /min faḍlik/ (if you please).

#### 4.2.4.2. Be, Have and Do

It may be known to the reader that Arabic does not have auxiliaries. The tense is marked in the main verb, e.g. the past

tense of the verb "write" is /kataba/, while the verb root is /ktb/. In English, the auxiliary is used as a tense marker (refer to the following section of Tense and Aspect for further discussion).

#### 4.2.5. Tense and Aspect

Ingham (1980) writes of his aspectual distinctions in Arabic and English:

"The basis of this study is /al-zaman/ (Tense) and /al wijhah/ (Aspect) in the Arabic verb. They differ in some respect with regard to Arabic and English languages. And although both languages indicate Tense and Aspect, the way of indicating in each language differs from language to language" (p.136).

His conclusion is that:

"the pointing out of one form to numerous tenses connecting the syntactical function to the structure were seen in the Arabic language. But in the English language most functions have a special form and the indication to the tense in most examples is necessary" (p. 146).

##### 4.2.5.1. English

The structure of the VP can be summarized as:

Aux → Tense (Modal) (Aspect)  
(Chomsky, 1965: 107)

and this Phrase Structure Rule can be expanded as follows:

Aspect → (have +-en) (be + -ing)

As the rewrite rule above indicates, the English VP is obligatorily marked for Tense (present/past), while the Modal, Perfect and Progressive, are optional elements and where they are present they occur in this order.

English, then, has only 2 grammatically encoded tenses (past and non-past or present). That is so if we regard tense as a matter of formal inflection and as associated with the main verb. However the expression of temporal relationships is not confined to the main verb alone. The distinction is present not only in Simple forms (eats, ate), but also in secondary forms (Perfect: has eaten, had eaten; Progressive: is eating, was eating; and



Perfect Progressive: has been eating, had been eating), where the first constituents carry the tense distinctions. The past/non-past distinction is also present in the modal auxiliaries as well, though not always semantically operative.

Aspect is marked by the presence of one of the following: the progressive form (be+V-ing) (which indicates the process of an action); the perfect form (have + V -en); the perfect progressive form (have + been + V + -ing). The intersection of all these categories of Tense (past and non-past) and Aspect (perfect and progressive) can be seen in the following display.

	NON-PAST	PAST
SIMPLE	V - Ø (except 3rd person sin- gular -s)	V - ed
SECONDARY	<u>Perfect</u>	
	{ have has } + V + -en	had + V + -en
	<u>Progressive</u>	
	{ am is are } + V + -ing	{ was were } + V + -ing
	<u>Per. Prog</u>	
	{ have has } + been + V + -ing	had + been + V + -ing

#### 4.2.5.2. Arabic

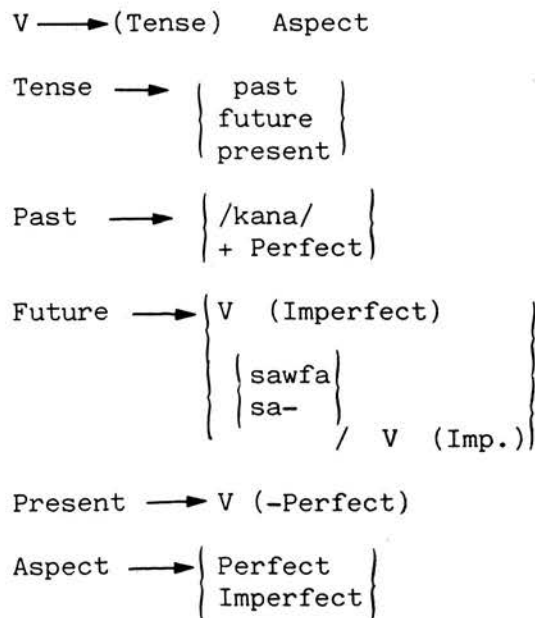
The Arabic verb shows two indicative conjugations for Aspect: the Imperfect (morphologically marked by prefixes) and the Perfect (marked by suffixes) which mainly indicate whether the action is viewed as incompleted or completed, respectively. In the absence of any further temporal specification the Imperfect serves to indicate an action which is regarded as in progress (at the present time or repeated action or with future time adverbials).

In the absence of any further temporal specification, the Perfect indicates a past action. /kana/ (traditionally called incomplete verb) serves as a temporal specifier, and in its perfect form /kana/ (was) locates the action in the past. Along with the particle /qad/, which serves as an 'intensifier' and /sawfa or sa-/, which express the future, an accurate specification or 'temporal location' can be achieved.

Ingham (1980) sees the system of tense and aspect in Arabic as:

"a very economic system because it expresses a great number of tenses and aspects by few forms. The meaning of these forms can be understood by recalling the structure in which they have involved and in the kind of verb root which these forms are derived from" (p. 147).

The structure of the Arabic VP



#### 4.2.5.3. Tense and Aspect in the present study

The elicitation materials include the following:

##### A. Present + V (Simple Present)

The verb bears the subject agreement marker (-s or Ø). It is used to indicate the occurrence of an action, or the existence of a state at the moment of speaking, or in the future, or to give expression to timeless statements. These uses correspond to those of the Arabic Imperfect.

### B. Present + be+ V + -ing (Present Progressive)

It corresponds to the Imperfect form of the verb in Arabic. This form is used in the elicitation materials to refer to future or intended happenings, usually with time adverbials which have future time reference. In Arabic, this use corresponds to the Imperfect form of the verb (optionally with time adverbials) or /sa-, sawfa / +V(+Imperfect). The future particles /sawfa or sa- /, however are used before the Imperfect to specify the future and express it emphatically (Bin Hisham's Mughni vol. I. pp. 138-139). For example :

/sawfa/ yusa:fir alṭa:lib ghadan/  
sa-

/ yasa:fir alṭa:libu qhadan/  
he-travel the student tomorrow  
(The student will travel tomorrow)

### C. Present + have + V + -en

Several attempts have been made to establish a 'root' or unitary meaning for the English perfect. Sweet's (1903: 104) definition is that perfective form expresses an occurrence which began in the past and is connected with the present, either by actual continuance up to the present time or its results. Such a definition has generally failed to account for the various and complex factors which contribute to, and determine, the several meanings, which the perfect forms have in different contexts. Crystal (1966) has shown that adverbials play an important role in determining, along with the verb forms, the various meanings which have been assigned to the verb forms alone, to the extent that some of these meanings could not be expressed without these adverbials.

It may be used to indicate an action completed in the past, but which result or outcome is still in effect. The duration of the action is not emphasized. The nearest Arabic equivalent to this use is V (+ perfect), but no grammatically encoded category can be considered an exact equivalent to the English present perfect. Semantically, however, Arabic is capable of conveying the different uses of the English pres. perfect. This involves the use of particles like /qad/ and

adverbs such as /tawan or litawi/ (just, now) and so forth.

D. Past + V (Simple Past)

It is used to indicate an action which began at a definite moment in the past and was completed before the act of speech. The Arabic equivalent is V (+perfect) . Also, it may be used in reported speech, where the simple past often replaces the simple present. In Arabic no such change occurs.

E. Past + be+ V + -ing (Past Progressive)

This is equivalent to the following Arabic structure:

/kana/ + V(+imperfect)	OR	/kana/ + participle
/kana yuḥaribu/		/kana qaddiman/
(He was fighting)		(He was coming)

F. Past + have + V + -en (Past Perfect)

This category indicates that an action or activity happens before another action in the past. The time reference is provided by the context, either explicitly or implicitly. This is expressed in Arabic by: /kana/ + /qad/ + V(+perfect) with the reference moment specified. In Arabic, the action is completed or accomplished e.g.

/kuntu qad qabaltahu 'indama: waṣaltim/  
 had I already met him when arrived you (plural)  
 I had already met him when you arrived

4.2.6. Copula

4.2.6.1. English

In cases of 'intensive complementation' (Quirk et al. 1972: 820) i.e. when a co-reference relation exists between the subject and the subject complement, English requires the use of a linking verb : 'copula'. The copula itself carries little meaning, yet it functions as a link between subject and its complement. Be is the typical copula in English.

According to Quirk et al. (ibid), there are three basic complement types which require the use of a preceding copula:

1. Noun phrase complement, e.g. He is not a teacher  
(Translation task: Negation No. 7).<sup>6</sup>
2. Adjective phrase complement e.g. He is not dead  
(Trans. task: Neg. No. 4).
3. Adverbial complement e.g. She was not in the Gulf  
(Trans. task: Neg. no. 26).

Ferguson (1971) classified two types of languages in terms of the presence or absence of the copula. Languages of type A, like English, have copula in normal, neutral and equational sentences. Conversely, languages of type B, such as Arabic, normally, have copula in equational sentences.

#### 4.2.6.2. Arabic

Ferguson (op. cit) states that in type B languages:

"the copula is invariantly absent in a main clause when both members of the clause (subject and complement) are present, the clause is timeless or unmarked present in time, the complement is attributive (i.e. adjectival rather than nominal) and the subject is third person" (p. 142).

In neutral present equational sentences, the copula is not realized:

1. /?innahu mudarris/ (Manipulation task: negation, no. 7).  
he teacher
2. /?innahu mayyit/ (Manipulation task: negation, no 4).  
he dead
3. /kanat fi al-Xalyij/ (Manipulation task: Negation no 26).  
was-she in the Gulf

As Sentence 3 demonstrates, the copula is used when a tense other than present is called for. Arabic is a VSO language so that when it is realized the copula is in the sentence initial, before the subject in equational sentences (refer to Section 4.2.8.2. and 4.2.9.2.2.2). If the subject is a pronoun, then it will not

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6. The examples used for illustration are drawn from the two written tasks: Manipulation and Translation (see Chapter 5 and App. 1.).

be realized in the surface structure of the sentence, but will be manifested by the inflection of the copula on the complement if it is a noun or an adjective (as shown by Sentences 3 - 6 ).

In Arabic, the copula is inflected for gender and number.

Compare:

4./ kana mudarissan/  
was-he teacher

5./ kanat mudarissatan/  
was-she teacher

6./ kanu: mudarissi:n/  
were-they teachers (M)

#### 4.2.7. Word Order

Word order is used in all languages:

"to a greater or lesser extent as a marker of various functional relationships, but different languages impose different ordering restrictions and within any one language some ordering restrictions are strict and other admit of a greater or lesser degree of latitude" (Brown and Miller 1980: 260).

The investigation of word order variation in SA has received relatively good attention both traditionally and within the transformational framework. Traditional Arab grammarians hold the common view that although various orders are exhibited in surface syntax, the basic order is believed to be VSO. There are, however, some exceptions e.g. Bin Hisham who seems in favour of SV0 as the underlying order. Within the framework of transformational grammar the question of basic word order received a great deal of attention. A number of studies were conducted arguing for the basicness of one ordering pattern or the other, (see for example, AL-Sweel 1983, Yusuf, 1984).

Thalji (1982) justly suggests that various ordering of the 3 constituents of VSO serves specific functions. His conclusion is that:

"while VSO order is established as the basic order in Arabic, strict in some contexts where no morphological

or semantic information is available, other surface orders like VOS, OVS are exhibited, but serve specific functions (Thalji *ibid*: 201).

Hatim (1985) argues that the nominal sentence (SVO) is used when the evaluative tone is intended, while verbal sentences are normally associated with narrative, expositive sentences.

The following is a rather tentative attempt<sup>7</sup> to account for the basic structure of the Arabic sentences included in this study.

S → (Pre S) + VP + NP + (NP) + (Adj P) + (PP) + (Adv P)  
 Pre S → { IMP } (NEG)  
           { Q }

VP → (Pre V) V  
 Pre V → { QAD }  
           { SAWFA }  
           { SA- }

V → (Tense) + Aspect + (+ Active)

NP → (Det) N (Adj P) ( $\bar{S}$ )

Det → Deictic (Quant. + Partitive)

Partitive → Genitive + NP

Deictic → (Demonstrative) Article ( $\bar{S}$ )

Adj P → (Det) Adj

PP → Prep + NP

Adv P → Time, Manner, Reason, Locative

#### 4.2.8. The Structure of Arabic Sentences

There are three main types of sentences. The nominal sentence begins with a noun (i.e. SVO); e.g. /'alyun yaktubu risa:latan/ (Ali writes a letter). The verbal sentence, in contrast, starts with a verb : VSO, e.g. /Xu% kita:bi: / (Take my book) (from the Manipulation task: Neg. No. 64). Finally, the equational sentence is composed of a subject and a predicate with no verb.

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7. This is based on many Arabic and English sources, mainly Abdel Hamid (1972), Abubaker (1970); Al-Afghani (no date); Al-Antaki (no date); Atiya (1976); Bach (1964); Chomsky (1965); Ibn aqyy1 (no date); Kebbe (1979); Sibawaihi (no date)



In an equational sentence, the subject is usually definite and present tense is implied, e.g. /aṭa:ʔiarah qadyimah/ (the plane old) (Manipulation Task: Negation, No. 49).

#### 4.2.8.1. Arabic Verbal and Nominal Sentences

The normal, non emphatic word order is verb, subject, object. In general, if the verb is Perfect, it precedes the subject, but if the verb is imperfect, either the subject or the verb can occur first (Abboud et al. 1968: 180-181).

This difference in order between the 2 patterns is reflected in a difference in number agreement between subject and verb. If the subject comes first (i.e. nominal sentence) the verb agrees with it in number (as well as in person and gender). For example:

Masc. sing.	/aṭa:libu yadrusu fi almaktabah/ student study in the library
Fem. sing.	/aṭa:libatu tadrusu fi almaktabah/
Masc. dual	/ aṭa:liba:n yadrusa:n fi almaktabah/
Fem. dual	/ aṭa:libata:n tadrusa:n fi almaktabah/
Masc. plural	/aṭula:bu yadrusu:n fi almarktabah/
Fem. plural	/aṭa:liba:tu yadrusn ..... /

However, if the verb precedes the subject, it is always in the singular, whether the subject is singular or plural. Still, the person and gender agree with the subject, e.g.:

/yadrusu aṭalibu/  
study the student  
/yadrusu alṭula:bu/  
study the students

In verbal sentences, the constituent tense is required for indicating complex relationships. When absent, the Aspect category, along with time adverbials, indicate the temporal orientation of the utterance, with the imperfect indicating either present or future, e.g.:

/aṭa:libu yadrusu/  $\left( \begin{array}{l} \text{ala:n (now)} \\ \text{qhadan (tomorrow)} \end{array} \right)$

The perfect, generally, refers to past time orientation e.g.:

/darasa alṭa:libu/  
studied the student

On the one hand, in English sentences, with the exception of the Imperative (also in telegraphic and certain varieties of business language as well as in brief notes, personal letters and diary entries), the subject must be expressed. In Arabic, on the other hand, the verb is marked for person and the subject, if a pronoun, is normally omitted.

#### 4.2.8.2. Arabic Equational Sentences

In Arabic, an equational sentence is called /mubtada' wa Xabar/ (theme-rheme constructions). Generally, Arabic equational sentences correspond to English sentences which have the structures:

$$\left[ \begin{array}{l} \text{NP} \\ \text{S} \end{array} \left[ \begin{array}{l} \text{Aux} \\ \text{Pred.} \\ \text{Phrase} \end{array} \left[ \begin{array}{l} \text{Be + Predicate} \\ \text{VP} \\ \text{VP} \end{array} \right] \right] \right]$$

Ph. S

where the tense constituent is Present.

The auxiliary constituent is present in the surface structure of an Arabic equational sentence, when a non-present point of temporal reference is to be indicated. This is signalled by the presence of the 'incomplete' verb /kana/.

In both languages, Arabic and English, the predicate can be a noun phrase (predicate nominal), an adjective or an adverbial phrase (refer to 4.2.6. above).

In Arabic, the predicate adjectives and the predicate nominals agree with the subject NP both in gender and number. Usually, they are indefinite (ending in -un, the nominative case marker,

with the exception of proper foreign nouns). However, when the predicate adjectives and predicate nominals are defined, a 3rd person pronoun, which agrees with the subject in number and gender and acts as a copula, is introduced before the predicate constituent, e.g. /ha: ʔa: huwa alkita:bu/ (This is the book). Arab grammarians have called this pronoun /damayir mafṣaww/ (the pronoun of separation), because it separates the subject NP from the predicate adjective or nominal, which otherwise would be interpreted as a modifier.

The subject of Arabic equational sentences- which may be a common or a proper noun, a pronoun or a demonstrative is usually definite and precedes the predicate. Yet, when the subject is indefinite and the predicate is an adverbial phrase, the subject could be placed after the predicate. These Arabic sentences, generally, correspond to English sentences with the existential there, e.g.:

(1) /rajulun fi almanzil/ (+ Nominative Case)

(There is a man in the house)

(2) /fi almanzil rajulan/ (+ Genitive Case)

Arabic sentences in which the indefinite subject is placed after the predicate may also correspond to the English sentences with have: 'to possess'. This is illustrated by the Genitive case in Sentence (2) above.

#### 4.2.9. Arabic Structure and English Structure in Certain Grammatical Areas

##### 4.2.9.1. Imperative

Imperative Sentences cover a wide range of semantic categories that may be labelled as Command, Request, Insistence, Warning, Wish, Advice and Exhortation. These categories are sometimes realized in the surface structure as verbs, e.g. command, demand, wish, urge, request etc., what Austin (1962) has termed 'performative verbs', or in speech by intonation. 'Please' is often added to mitigate a command to a request. Further, imperatives show some restrictions: (1) they do not co-occur

with the 'negative preverbs', such as hardly, scarcely; (2) they do not co-occur with some sentence adverbials, e.g. certainly, may be, perhaps.

In English, the imperatives are those sentences which, usually, have no overt subject and an uninflected verb form, in their surface structure. Imperative sentences are formed by a transformation which deletes the Aux constituent and optionally deletes the subject NP (which in most cases is You whether singular or plural) (Langendoen 1970: 157-159).

The imperative mood of the verb is used to form 2nd person positive imperatives in Arabic, e.g. /ʔftaḥaww kutubakum/ (Open your (plural) books). Contrary to English the Arabic verb in the imperative mood is marked for number and gender.

The following Table (4.3.) displays the transformation that the Arabic verb undergoes when the feature (+ Imp) is assigned to it.

-Imperative	+ Imperative
+ perfect, 3rd person singular + masculine	- perfect, 2nd person singular + masculine
1. CVCVCV /darasa/ (studied)	ʔi- CCVC /ʔidrus/ (study)
2. ʔista-CCVCV /ʔistanjada/ (asked for help)	ʔista-CCVC /ʔistanjid/ (ask for help)
3. CVCCVCV /fakkara/ (thought)	CVCCVC /fakkir/ (think)

The details of this transformational process do not seem relevant to this study and, therefore, we shall overlook them.

What really concerns us in this respect is that in sentences

having the following form :  $S \rightarrow \text{Neg} + \text{Imp} \ S$ , the negative item must always be realized as /la:/ + V (+ Jussive). Semantically speaking, this denotes prohibition; i.e. negative order requiring the addressed person Not to do whatever is indicated by the adjacent verb. This is equivalent to the English (do not) in: Do not drive too fast, where both Neg and Imp are incorporated. Obviously, the subject is always the 2nd person (singular, dual or plural). As in positive imperative sentences the subject is usually absent in the surface structure. Negative adverbs such as ever and never, may occur in negative imperatives with resulting emphatic overtones, e.g.:

/la: taf'al ha:ʔa: abadan/ (Do not (you) ever do that)

Examples of negative imperative sentences are Sentences 33 and 64 in the Translation Task:-

Do not clean the blackboard.  
Do not take my book.

#### 4.2.9.2. Negation

##### 4.2.9.2.1. English

Klima (1964) divided English negation into 2 types: (1) sentence negation and (2) constituent negation.<sup>8</sup> Positive declarative sentences can be negated by adding not or its contracted form n't after the first element in the Aux (which can be a modal, a copula, be or have), e.g.:

The capital is not big (Translation Task: Neg. No. 14).

You cannot write on the wall (Translation Task: Neg. No. 8).

I am not going (Translation Task: Neg. No. 3 ).

I have not seen him since Friday (Translation Task Neg. No. 48).

When there is no Aux in the structure of the affirmative sentence, a form of the dummy Aux do, in the same tense and

---

8. Constituent negation is carried out by means of affixes, e.g. un-, in-, -dis, or -less. This type will not be considered in this study.

number as the main verb, is introduced before the main verb followed by not or n't and the MV loses its inflections e.g.:

Butchers do not sell vegetables (Trans. Task: Neg. No. 18).

Ali does not go to the cinema weekly (Trans. Tas: Neg No. 32.)

According to the transformational theory, the derivation of such negative sentences from the deep structure requires the additional transformation of do - support hence, more difficult to be acquired.

#### 4.2.9.2.2. Arabic

Negation in Arabic as in English is exclusively preverbal. In most cases, the verb is at the beginning of the sentence, hence the negative particle is usually in sentence initial position. The negative particle also serves as a tense carrier because the verb form that follows is usually imperfect. This makes it in a way similar to English (in this respect).

In dealing with negation in Arabic, it is more convenient to treat verbal initial sentences and equational sentences separately, since the actual surface representation of the negative particle is mainly determined by the verb. In equational sentences however, there are no verbs.

It is worthwhile pointing out that what we are interested in describing here, is the surface structure of the investigated sentences as the learner sees them. That is, the actual realization of the Arabic negative sentences in their final forms as the learner would have written them rather than getting involved with complex explanation of the deep structure relationships between the constituents.

#### 4.2.9.2.2.1. Verbal Sentences

A.La: The negative particle /la:/ is used to negate sentences containing a verb in the imperfect, by placing it before the verb, e.g.

/la: yal'abu:na fi alša:ri'/ (Manipulation Task: Neg. No.6)  
(They do not play in the street)

B. Lan /lan/ V(+ subjunctive + imperfect ) expresses an emphatic negative in the future equivalent to 'will not' or 'be + not + going + to' + V; e.g.

/lan yaʔti: aḥmed/ (Manipulation Task: Neg. No. 1)  
(Ahmed is not going to come).

C. Lam The negative item lam's occurrence is governed by the aspect of the verb which must always be perfect. The particle /lam/ is a tense carrier, therefore, the verb is superficially transformed and assigned the features (+ imperfect + jussive). This 'transformational rule' is obligatory and should be applied after the insertion of /lam/ has been effected: e.g.

/ʔaḥbarani: /      /lam yuḥbirni:/ (Manipulation Task No. 5).  
(He told me)      ( not (past) he tell me)

#### 4.2.9.2.2.2. Equational Sentences

In present tense equational sentences are negated by /laysa/ inflected for person and number; and is used in sentence initial position. Some Arab grammarians (e.g. Ibn Al-Saraj cited in Ibn 'aqqyl 698-769 A.H. p. 277) classified /laysa/ as a negative particle, while the majority consider it an 'incomplete verb', mainly because it is inflected for number and person. Traditionally, /laysa/ is often referred to as a 'sister of /kana/' (was). Differences, however, occur mainly no prefix indicating the tense of the sentence can be attached to it. If a change in the tense is required, it is done by using the copula /kana/ and /laysa/ gets transformed into /lam/. Consider the following examples:

/laysat al'aṣimah kabyi:rah/ (Manipulation Task: Neg. No. 14).

not-it the capital big  
(The capital is not big).

/lam takun (+jussive + imperfect) al'aṣimah kabyi:rah/.

not (past) is the capital big  
(The capital was not big).

Since /laysa/ is considered as a verb, when the subject is a pronoun it is deleted; e.g.



/ʔinnau: mudarrisun/	/laysa mudarrisan/(Manip.Task Neg. No.7)
he teacher	not-he teacher
(He is a teacher)	(He is not a teacher)

The following table 4.4. describes the similarities and differences between Arabic and English formation of negation, mainly with /la:, lam, lan/ and /laysa/.

Table 4.4.

Negative Item			Arabic	English
Verbal Sentences	lam e.g.	Neg form+t(per)+mv(imp)+sub... Y lam tašel alta?irah not (past) arrive the plane	sub +Aux+Neg form+mv ...Y	
	lan e.g.	Neg form+mv(imp)+sub...Y lan ya?ti: Ahmed not (future) come Ahmed		
	la e.g.	Neg form+mv(imp)+sub ...Y la: yal'abu:na fi..... not (present) play they in ....		
Eq.S.	laysa e.g.	laysa- +pers+no. + sub....Y laysa mudarrisan not teacher		

Neg. Negative, mv = main verb, sub=subject, t = tense, aux = auxiliary  
per = perfect, imp = imperfect, no. = number, pers = person, Eq.S. = Equational Sentences

The difference between the Arabic and the English formation of negation lies in the order and the use of auxiliaries. As has been mentioned above, (Section 4.2.4.2.), the Aux in English is a tense marker, while in Arabic the tense is marked by the verb. In verbal sentences the Arabic negative particles are followed by verb stems, whereas in English, the negative follows the auxiliaries. Arabic subjects follow the MV, while, in English, subjects are in sentence-initial position. Hence the order in Arabic is different from that in English.

Through the analysis of the data, an attempt will be made to

determine the stages of the acquisition of the negative formation, as well as defining by means of implicational scales the type of the four negative forms, which occurred in correct form most frequently as well as those which occur in correct form less frequently (i.e. the most and the least favoured type of the four negative items).

#### 4.2.9.3. Interrogation

One crucial fact about interrogatives is that they resemble imperatives in that they are semantically a special kind of request (Baker 1970). However, while imperatives may involve some extra linguistic behaviour or action, questions are, in most cases, limited to linguistic responses. Thus, we may assign the semantic interpretation (2) to the imperative sentence (1), and similarly, the semantic interpretation (4) to the question (3):

1. Open the window
2. I ask/order you to open the window
3. Are you going to visit him?
4. I request you to answer 'X I will/will not go to visit him'.

Katz and Postal (1964) justify having a Q as a trigger to induce Sub-Aux inversion in English questions as in Has he arrived? and also to account for the non-occurrence of some adverbials like 'certainly, probably' in interrogative sentences. In Arabic, Kebbe (1979) suggests the need for a presentational Q which "seems to be well motivated on the grounds that it serves as an abstract node-label that dominates other interrogative" particles, e.g./hal, ?a /found with Yes/No questions.

#### 4.2.9.3.1. English and Arabic Interrogation

##### 4.2.9.3.1.1. Yes/No Questions

A. English In English, Yes/No questions are formed by Sub/Aux inversion, e.g. He is abroad —→ Is he abroad? In cases where the finite verb is in either the simple present or past tense, the periphrastic do is inserted in the appropriate tense and number and then the placement of the Aux is as follows Aux + Sub + MV....

B. Arabic /hal/ and /?a/ may equally occur in structures where the answer to the question is either Yes or No. They exhibit some semantic as well as syntactic differences, however, this does not seem relevant to the present study; moreover, since our interest is mainly in learners' stages of development in acquiring questions we shall overlook them.

Arabic Yes/No questions are formed as follows:

$$\left\{ \begin{array}{l} /hal/ \\ /?a/ \end{array} \right\} + V \left( \begin{array}{l} + \text{imperfect} \\ + \text{person} \\ + \text{number} \end{array} \right) + \text{Subject} + (\text{Object}) \dots Y$$

For example:

/hal ha:ʔa haqyiqah/ (Manipulation Task: Interrog. No. 46)

QF this true

Is this True?

#### 4.2.9.3.1.2. Wh- Questions

There is not much degree of syntactic similarity between Arabic and English in the formation of Wh- questions. The only similarity between the two (i.e. the Arabic formation of wh-questions and the English formation of wh-questions) is the use of question particles at the beginning of the sentence.

In this study 7 types of wh-questions are investigated. These include: Why, Where, When, What, Who, Which and How. The following table (4.5.) shows the similarities and the differences between the Arabic and the English wh-question formation.

Table 4.5.

Question Particle	Arabic	English
Why e.g. (Elicitation Mat. No.41)	QP + MV + T + SUB (OBJ).... Why tore Ahmed the letter	QP + AUX + SUB + MV + (OBJ) Why did A tear the letter?
What e.g. (Elicitation Mat. No. 3)	QP + MV + T + SUB What read Mohammed	QP + AUX + SUB What did M read?
When e.g. (Elicitation Mat No. 39)	SIMILAR TO WHY When wrote Ahmed the letter	SIMILAR TO WHY When did A write the letter?
Where e.g. (Elicitation Mat. No. 7)	SIMILAR TO WHY Where received M the letter	SIMILAR TO WHY Where did M receive the letter?
How e.g. (Elicitation Mat. No. 37)	SIMILAR TO WHY How received M the letter	SIMILAR TO WHY How did M receive the letter?
Who e.g. (Elicitation Mat. No. 18)	QP + MV + T + OBJ Who go home	QP + MV + AUX + OBJ Who is going home?
e.g. (Elicitation Mat.No.11)	QP + MV + T + SUB Who we then	QP + MV + AUX + SUB Who are we then?
Which e.g. (Elicitation Mat No. 82)	QP + OBJ + MV + T + (IT) <sup>9</sup> + SUB Which book chose he	QP + OBJ + AUX + SUB + MV Which book has he chosen?
e.g. (Elicitation Mat.No.8)	QP + SUB + MV + T + (IT) +OBJ Which car took her to the school	QP + SUB + AUX + MV + OBJ Which car took her to school?

QP = Question Particle, SUB = Subject, T = Tense, OBJ = Object, MV = Main Verb,  
Mat = Material, Aux = Auxiliary

The table above clearly shows two main differences between the Arabic and the English Wh- question formation. First, the use of auxiliaries in English. As previously mentioned, Arabic does not have such auxiliaries, the tense is marked in the main verb. The second difference between the Arabic and the English formation of

9. In WHICH questions the main verb is optionally marked with a suffix referring to the object.

Wh-Qs. is the order. In Arabic the MV of the interrogative sentence precedes the Sub. On the other hand, the order in English is different to that in Arabic: The MV follows the Sub.

Looking at Table (4.5.) we will notice that Who -question formation in Arabic is similar to that in English. A reasonable contrastive analysis type prediction would be that learners would more easily master Arabic Who questions than other types of Wh-Qs. One of the specific aims of this study is to investigate the most and the least favoured type of the seven wh-questions.

#### 4.2.9.3.1.3. Negative Questions

As Langendoen (1970) points out that negative questions are semantically problematic, because they do not function as denials of questions. Instead, they are used when the speaker expects a positive answer (Yes) to the corresponding affirmative questions; e.g. when asking Isn't he coming?, we expect the answer to the corresponding affirmative question: Is he coming? (i.e. Yes) (pp. 155-169).

Negative questions combine in their formation both questions and negative constructions, with the negative transformation applying before the question transformation to place the negative element after the Aux. In the formation of Negative Yes/No Qs. in Arabic, the interrogative particle /?a/ is placed before the negative element (which is usually in sentence initial position) e.g.:

/?a-laysa ladayika ayy şadyiq/ (Manipulation Task No. 13)  
 QP Neg. P have you any friend  
 Don't you have any friends (Translation Task No.13)

Similarly, Negative Wh-Qs. are formed. For example:

/ayya risa:lh lam tursl marriam/ (Manipulation Task No. 12)  
 any letter (f) did not send Marriam  
 Which letter didn't Marriam send (Translation Task No.12)

CHAPTER FIVE  
EXPERIMENTAL PROCEDURES

5.0. INTRODUCTION

Having stated the general aims, the context of the investigation in Chapter 1, discussed the empirical studies and the theoretical models concerning aspects of SLA and the description of learners' IL in Chapters 2 and 3, and presented the structure in Chapter 4, we are now in a position when the experimental procedures of the investigation should be more concretely dealt with. In Section 5.1., therefore, the hypotheses are formulated. The next section (5.2.) presents information about the subjects of this study. Elicitation procedures are discussed in Section 5.3. After that, the data collection is presented. Lastly the criteria for assessment are outlined (Section 5.5.).

5.1. HYPOTHESES

The hypotheses presented below are to be tested in the course of the study and if they are found to be supported/rejected, will add to our understanding of the nature of the process of IL. The hypotheses fall into three main groups: these are grouped according to a common aspect of investigation. For each group of hypotheses, both the null hypothesis, which is to be tested and its alternative hypothesis are presented.

The sets of hypotheses in the three groups form the general hypotheses applicable to the two main syntactic areas under investigation, (namely Interrogation and Negation). Other hypotheses specific to each area are presented at the beginning of the data analysis in Chapter 6.

Group One

The hypotheses in this group address the question of the nature of the learners' IL (refer to Section 3.1.5.).

Hypothesis 1.1.

H<sub>0</sub>: The IL continuum is not developmental; i.e. there is no significant difference between Levels.

H<sub>0</sub>: The IL continuum is developmental and the learners move towards the TL along a continuum of increasing complexity. There is therefore a significant difference between Levels.

This hypothesis is related to the next hypothesis:

Hypothesis 1.2.

H<sub>0</sub>: Learners of the 5 different levels are not placed at different points in the IL continuum.

H<sub>1</sub>: Learners of the 5 different levels are placed at different points in the IL continuum. Learners, then, can be said to be at different points of the IL continuum according to their proximity to the TL. In this sense, variability comprises a diachronic dimension; i.e. variability due to changes as time (therefore, learning) passes.

Hypothesis 1.3.

H<sub>0</sub>: The learner's system is not one of variable rules. Thus, there is no synchronic/horizontal variability within the same task performed by the same learner.

H<sub>1</sub>: The learner's system is one of variable rules. Therefore, there is a synchronic/horizontal variability within the same task performed by the same learner. This is due to the claim that at particular points in time rules change because of different hypotheses being tested (by the learner).

Hypothesis 1.4.

This hypothesis relates to the theory of markedness (Section 3.3.6.) and will be supported, or not, by error data, but not subjected to significance tests.

Development towards the target norm can be explained through a theory of markedness in which:

- a) Initial stages of IL are characterized by unmarked categories.
- b) Development towards the TL is achieved from unmarked categories.
- c) SL syntactic development is characterized by learning sequences in which 'base structures' are learned first, then



increasingly 'transformed structures' are acquired (Dato 1975: 248).

- d) Syntactic development sequence is from the less to the most complex, hence what is less marked is implied by what is more marked (Bailey, 1977).

#### Group Two

The set of hypotheses are related to comparisons between learners' performance on different elicitation tasks. Since the elicitation procedures are believed to be different in their degree of formality and required attention (Section 2.2.2.5.2), theoretically, allowing free variability to appear. Learners move up and down the IL continuum depending on the degree of formality in the style. The Manipulation Task, through which learners' explicit/formal knowledge could be tested, is therefore nearer to the TL. The Translation Task, on the other hand, is nearer to the NL; i.e. learners' implicit/informal knowledge is used.

Accuracy scores will be evaluated, and will be used to place the learners on different points on the IL Continuum. Data showing qualitative differences and differences in error-types will be used to show the different strategies, if any, used to handle different tasks. It is hypothesized, for example, that the Translation Task may show NL influence, more than the second task. In other words, transfer from NL might be clearer on the Translation Task.

#### Hypothesis 2.1.

H<sub>0</sub>: The two different tasks do not impose varying demands on the learners' unstable and dynamic system of IL. Hence, there is no synchronic/horizontal variability. To put it differently, there are no significant differences in the learners' performance scores on the two tasks.

H<sub>1</sub>: The two different tasks do impose varying demands on the learners' system. Therefore, there is a significant difference in the learners' performance scores on the two tasks.

(Differences between tasks will be empirically tested by ANOVA and Scheffé-tests).

Hypothesis 2.2.

H<sub>0</sub>: There are no differences in the error-types and the use of different features of IL on the two tasks.

H<sub>1</sub>: There are differences in the error types and the use of different features of IL on the two tasks. Hence, different tasks necessitate varying degrees of access to and control of linguistic knowledge for the learner.

Hypothesis 2.3.

H<sub>0</sub>: The two tasks do not show a different picture of the acquisition of rules, therefore the stages of development are similar on the two tasks.

H<sub>1</sub>: The two tasks do show a different picture of the acquisition of rules, hence the stages of development are different on the two tasks.

Group Three

The hypotheses in Group Three are related to the concept of developmental sequences in SLA. (Refer to Section 2.2.2.3).

Hypothesis 3.1.

H<sub>0</sub>: There are no sequences of development for the syntactic structures investigated (i.e. Negation and Interrogation).

H<sub>1</sub>: There are sequences of development for each of the investigated areas. (The developmental stages are presented by implicational analysis).

Hypothesis 3.2.

H<sub>0</sub>: The developmental stages do not overlap. In other words, there is a clear cut difference between the stages of development.

H<sub>1</sub>: The developmental stages overlap. Therefore, there is no clear division between the sequence of stages. In addition, learners may regress to an earlier stage or even skip a stage.

5.2. SELECTION OF SAMPLE

Finding native English-speaking learners of Arabic in Britain was difficult, since the number of learners was (and is) not large.

To make the situation even worse, it was difficult to find students who were interested enough to spend time answering two

optional tasks, which means more work added to their study. The investigator, therefore, had to chase up her subjects using different ways of persuading (e.g. telling the learners: "The tasks are helpful to your study". "I need your co-operation". Money motivation was also used).

A lot of learners were willing to help. Some, however, had to be excluded for one of the following reasons:

(i) Their command of Arabic was much lower than the tasks' level especially those who were in the first term of the first year, they were in the stage of learning Arabic orthography.

ii) In spite of the fact that some learners kept the tasks for nearly one month - (the average time is 4 hours for the two tasks to be completed) - they claimed, for one reason or another, that they could not find the time to complete all parts of the exercise.

(iii) Other learners agreed to do the Translation Task, but claimed that they would take 'ages' to read the Manipulation Task because, as they put it, they "learned to read only Arabic texts with diacritics". This, however, was felt to be not more than an excuse, since other learners from the same university and at the same level found the Translation Task more time consuming (see Section 5.4.).

The vowel marks/figures were not supplied in the Manipulation Task because the Arabic written task (App. 1.) did not include words that would confuse the meaning unless the motion marks were supplied. In fact, most old and modern Arabic texts and all Arabic newspapers and magazines put vowel marks only when there is a chance of misunderstanding of the meaning of a word.

#### 5.2.1. The Subjects

The sample of this study is probably best described as a judgement/available sample rather than a random one. A random sample is a sample where every member of the population has the

same chance of being selected (the population in question being a large one) and therefore, the sample has to be drawn from some kind of pre-arranged list. However, it was extremely difficult, if not impossible, to draw a random sample as such for this study because of the reasons mentioned above.

In this study, the sample is 56 learners of Arabic as an SL in a foreign language context: Britain. Three learners completed only the first task (Translation). They were not able to finish the second task for different reasons: Learner No. 6. left to go to Spain for a job; whereas, learner No. 53 changed his subject of study because, as he put it, he "did not like the way of teaching". The third (subject No. 7) went to Egypt to get more experience of Arabic in a host language environment.

As to the learners' linguistic proficiency, they do represent more or less all levels, i.e. beginners as well as advanced. According to level at University, the learners could be divided into 5 groups as follows:-

1. First year: Learners: 2, 11, 22, 25, 26, 28, 31, 35, 37, 39 and 53.
2. Second year: Learners: 3, 9, 17, 27, 29, 32, 41, 43, 52, 24 and 50.
3. Third year: Learners: 33, 21, 18, 13, 10, 7, 51, 14, 1, 34, 38, and 4.
4. Fourth year: Learners: 12, 15, 44, 36, 5, 8, 20, 40, 48, 45, 46, and 55.
5. Postgraduates: Learners: 6, 16, 23, 30, 49, 54, 56, 19, 42 and 47.

The sample, then, might be described as comparatively smaller than the sample used by other investigators. On the whole, however, Labov (1970) reports that even a smaller sample than this may serve the purpose of a linguistic study<sup>1</sup> :

"The regularity of (pattern of variation) emerges from samples with as few as 5 individuals in one sub-group and no more than 5 or 10 utterances in a given style for each individual" (Labov *ibid*: 285).

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1. Labov's work is, of course, on first language.

### 5.2.2. General Characteristics

The Arabic Second Language (ASL) learners who participated in the study were drawn from 5 British universities (Durham, Edinburgh, Glasgow, London (SOAS) and St. Andrews). All the learners in the study had undertaken some ASL instruction. The organization, method and intensity of this instruction varies from one establishment to another. All programmes, however, tend to focus on developing vocabulary and reading and writing skills, and using the language (mainly for written purposes) and on teaching old and modern Arabic Literature and Islamic history.<sup>2</sup>

Outside class, the learners have no chance to use Arabic communicatively, unless with Arab friends who may not always sacrifice practising their English (with natives) to speak Arabic. No criteria were laid down for the choice of subjects except for the fact that they had to be English native speakers.

The Male/Female distinction was not considered to be relevant.

### 5.2.3 Differences among the subjects

Within the framework of this investigation a systematic control of variables related to heterogeneity of the subjects was not feasible. It was not possible, for example, to control for socio-economic or motivational and affective (psychological) variables or length of exposure in an Arabic-speaking environment.

From the replies to the questionnaire (App. 2.A), which was designed to determine the learners' background (e.g. length of exposure to Arabic in a host environment, length of study, age, sex, motivation, knowledge of other language(s)), the researcher

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2. Campbell (1986: 150) states that "university Arabic courses, while faced with certain important considerations that affect the objectives and content of modern language courses, are locked by their methodological shackles into a vicious circle that allows them neither to take advantage of the finding of linguistic research into language teaching, to utilise sound language teaching techniques, nor to provide the kind of course content that will be professionally useful to their graduates".

was able to notice the following differences among the subjects:

- (i) The subjects are English learners of Arabic spanning a range of variety in age, motivation and linguistic competence (App. 2.B).
- (ii) Not all learners follow the same educational programmes. However, we can assume that they receive the same type of ASL instructions and, in general terms, the same kind of exposure to Arabic (in their classes). It is worthwhile mentioning here that since our main interest was in the learning perspective, rather than the teaching perspective, comparisons between different groups taken from different universities were not carried out.
- (iii) In terms of the learning - acquisition distinction (Section 3.2.1.1.) some subjects can be considered to be more formal learners, mainly those who did not have the chance to experience Arabic in a host environment or from native speakers of Arabic. Corder (1973: 58) calls such learners "captive learners", where the only possible input available for learners to draw on is the classroom. Other learners had different ranges of exposure to Arabic in various host environments (e.g. Egypt, Jordan, Sudan, and Syria). This, however, does not entail that all learners who lived for X period of time benefited from it. Also, since there is no strong evidence to suggest that such differences influence the sequence of development (Sections 2.2.2.5.1. and 2.2.2.6.3.), they were not considered as likely to interfere with the aims of the study.

### 5.3. DATA

#### 5.3.1. Elicitation Procedures

The study was carried out mainly by analyzing the IL of the learners. In order to generate the type and quantity of data that will be adequate for our investigation, a decision has to be made

concerning what elicitation procedures to use.

Corder (1973: 61) describes an elicitation procedure as "any procedure which causes a learner to make a judgement about the grammatical acceptability of a form or provokes him into generating a linguistic response". Moreover, he draws a distinction between textual and intuitional data arguing that if we are to provide descriptively adequate accounts of the learner's IL, our description must not only take account of, but must also be in accordance with, the learner's grammatical intuitions about his/her IL.

Corder's distinction is crucial, because the data on which investigations of L1 and L2 have been of these two kinds: (1) textual /performance which are based on spontaneous linguistic production by the learner and (b) intuitional data which are "based on speaker reaction to already produced sentences such as judgements of grammaticality and ungrammaticality, paraphrase, synonymy, ambiguity, relatedness, etc." (Schachter et al. 1976: 68).

Many IL researchers have, however, relied only on textual data hence neglecting intuitional data. Selinker (1972) for example, explicitly rejects the use of intuitional data in SLA studies. His suggestion is that we should "focus our analytical attention upon the only observable data to which we can relate theoretical predictions: the utterances which are produced when the learner attempts to say sentences of a language" (p. 213).

However, the limitations of textual data as the only basis of the investigation of learner's language are apparent: (a) the textual data used are usually not spontaneous language, produced by the learner under the pressure of natural communicative needs, but are produced under classroom conditions or similar situations; (b) varieties of artificial constraints are imposed on the learner's quantity and quality production through restricted topics, restricted functions, restricted time and, obviously, the social relationship between learners and researcher. All these issues may result in the learner producing only a few utterances



which will meet the minimal needs of the task, and thereby the result of the study may be affected. Lastly (c) the learner will also place limitations on the quality of the data by selecting from his repertoire only the patterns he is reasonably sure he knows and by avoiding structures that he believes will cause errors.

Using textual/performance data solely to investigate learners' language means that the researcher will only be investigating what the learner wishes to reveal about his IL. Corder (1973), therefore, argues "a description based only on textual data cannot achieve more than observational adequacy" (p. 59). In addition, he proposes that whatever hypotheses researchers derive from such data should be validated by the learner's intuitional data. That is: to give the learner the opportunity to use the intuition of his grammatical competence to accept or reject a given TL form.

The importance of intuitional data in addition to textual data in the investigation of IL, is also recognized by Schachter *et al.* (1976). They found, in an experiment with 100 ESL students, that the use of intuitional data provided a lot of insights into SL learners' knowledge of the TL.

#### 5.3.2. Design of Elicitation Materials

In making decisions as to the type of tasks to be used, there is an unavoidable tension between the desire to elicit information about a learner's IL at as close a level as possible to the level of the learner's spontaneous unattended linguistic system, and the need to ensure sufficient occurrences of the structures being studied. Any solution, however, clearly necessitates a compromise between these two factors. In coming to this compromise, it is apparently important to choose a task which fulfils the requirement for obligatory contexts whilst obtaining evidence of the IL grammar of the learner which is as close to his/her spontaneous level as possible.

As previously mentioned (Section 2.2.2.5.2.) different tasks are

different types of check lists on the situational variables, the degree of control or access to knowledge, learners' variables and the effectiveness of the different tasks. Since (1) the last mentioned, i.e. the advantages of a particular task over the others is still a controversial point; (2) many SL researchers believe that the competence and linguistic system of the learner cannot be gauged only by production on textual data, and since (3) a strictly observational and longitudinal study of spontaneously IL production has not been possible (because of practical problems), a battery of tasks is considered necessary for a systematic and exhaustive study of the learners' IL system. For this study, therefore, the elicitation procedures elicit the above mentioned kinds of data: textual and intuitional.

Some constraints on the learners' production are needed. These constraints are based on the hypotheses we have formed from our knowledge of the learners' IL. Thus, we did our best to make it impossible for the learners to avoid the structures which have been specified for study. Also, when designing the elicitation instruments, we made sure that our learners would be able to produce sufficient quantities of the structures under investigation. Finally, as far as data quality is concerned, by giving as much time as possible for the elicitation tasks, the learners then could be said to use both their explicit/formal and implicit/informal knowledge of the TL (Krashen 1976). And by giving the Manipulation Task (mainly recognition and correction), learners use their grammatical competence to make judgements on given TL forms, such data to include the learner's intuition/implicit knowledge on the investigated structures.

The starting point of the construction of the elicitation materials was written tasks from learners of ASL. These written tasks coupled with:

- (a) the investigator's experience as an SL learner;
- (b) several years of teaching ESL;
- (c) the investigator's relationship with learners of ASL;
- (d) many 'chats' with teachers of ASL;

provided a preliminary knowledge of the structures which could be

problematic for learners of Arabic.

It was on these bases that we designed the elicitation materials which we used to generate linguistic responses from the learners. We also made sure that the structures in question were elicited in such a way that we could count and quantify learners' performance. This was to enable us to have objective results that are capable of being used to draw comparisons between individuals as well as groups of learners at different time points in the learning continuum. The quantification of our results enables us to make proper generalizations about the learning process of the learner.

Our elicitation materials were designed to investigate patterns, if any, in Interrogation and Negation and the influence of the linguistic environments in which they occur. The developmental sequences involved in learning the structures were also investigated.

A set of elicitation tasks were constructed:

- (1) a Translation Task (TT);
- (2) a Manipulation Task (MT).

Graphically, the elicitation materials are presented in Figure 5.1. below.

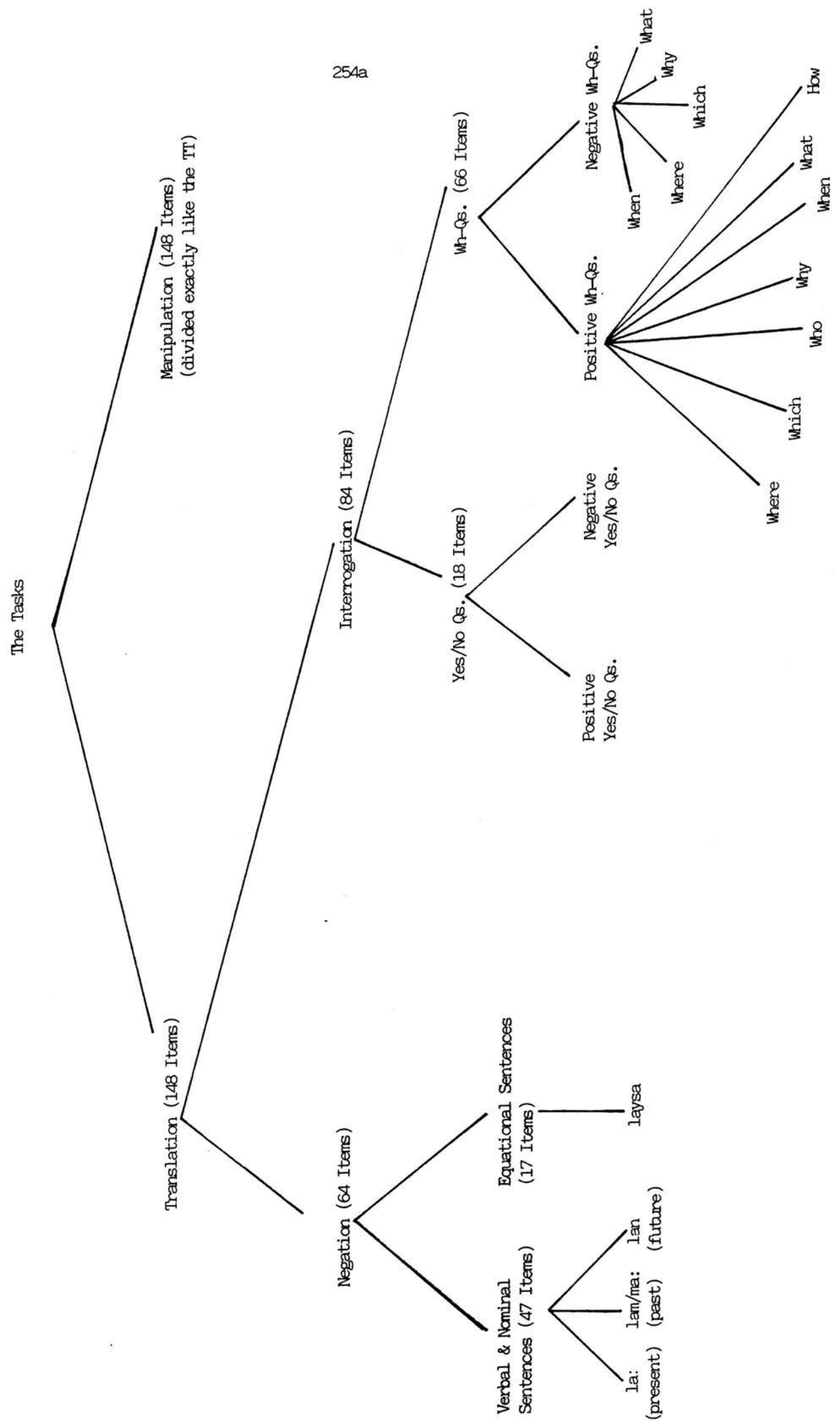
The subjects were given the Translation Task first. This approach was mainly to observe how the learners respond when they do not have the TL version from which they could get some hints.

It should be mentioned that the items included in the tasks are adapted and sometimes taken from books teaching Arabic for non-natives; (e.g. Abdo 1962; Beeston 1970; Cantarino 1975; Abbud et al. 1976). Most of the sentences are simple ones. Others are not. For example:

Question No. 42: Is this the letter which the ambassador sent?

and

Figure 5.1. The Elicitation Materials in the Study



Question No. 79: Is this the message which the ambassador carried?

(Translation and Manipulation tasks, Part A: Interrogation)

The sentences given below are more difficult than the rest. This is mainly because they are either compound or complex sentences in comparison to the simple ones.

Sentence No. 10: The car which left the country was not the Prime Minister's.

Sentence No. 54: I have never seen a man with Kohel in his eyes handsomer than it is in Zeid's eyes.

(Translation and Manipulation tasks, Part B: Negation)

### 5.3.3. The Translation Task (TT)

Translation<sup>3</sup> is "a craft consisting in an attempt to replace a written message and/or statement in one language by the same message and/or statement in another language" (Newmark, 1982: 7). Corder (1973) suggests an elicitation procedure which requires direct translation from the NL into the TL. This method has proved successful in studies conducted at Edinburgh. It has the advantages of: (a) forcing the learners to attempt to form a desired TL structure: and (b) assuring that the learner understands the semantics of the structure which he is required to produce. Also (c) by forcing learners to form structures which they have not completely mastered, the experimenter can gain insights into how the learners understand the language to operate and how they organize new syntactic constructions in their IL. It follows that many imperfectly controlled structures are apt to yield examples of both overgeneralization of TL rules (which the learners have mastered) and negative transfer from the NL.

Furthermore (d) direct translation has been proved as "a useful approach for diverting the informant's focus of interest from the object of the test and indeed in disguising this object" (Quirk and Svartvik 1966: 14) (e) In favour of a translation task to

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3. It should be noted here that, in including the Translation Task, our main concern is collecting data from the learners and not discussing translation theories.

test SLA, LoCoco (1976) writes about the statistical advantage in a translation task where "the researcher can zero in on specific syntactic rules which he would like to test. The investigator controls the number of obligatory occasions for error" (p. 62).

(f) The Translation technique is considered to be the nearest to the learner's IL, because the learner is met with linguistic data from his NL, which he has to translate into a foreign language - a language that he does not fully command. It is also considered to be spontaneous language produced by the learner under the pressure of communicating in another language. Some constraints are imposed on it e.g. restricted topics, restricted function, restricted time.

Swain et al. (1974) present elicited translation as an alternative to spontaneous speech. They believe that "a translation task where the TL is the S's weaker language, i.e. his second language (L2) could be used to measure the S's production in the TL" (Swain et al., *ibid*: 73).

In answering the question of how the learner's competence is reflected in elicited translation Swain et al. (1974: 76) cite Naiman's (1973) study which suggests that:

"translation is a valid instrument to use to collect second language comprehension and production data. On the one hand, a comparison of the results of both comprehension tasks, one using picture-identification and the other using translation (L2) to (L1) was found not significant; on the other hand, errors in translation committed when Ss were translating into French were for the most part the same as those made in their spontaneous production and imitation".

In accord with Corder's (1973) and Swain et al. (1973) suggestions direct translation was used to elicit attempted production of the structures under investigation.

It might be argued, however, that a translation task 'loads' a study in favour of transfer and interference (Taylor 1975b: 76). Yet many researchers have successfully used this technique for

eliciting IL data, acknowledging that its advantages more than outweigh its shortcomings. Taylor (1975a) himself found evidence of enough strength of the power of overgeneralization over the transfer strategy in a translation task to merit its use.

Another shortcoming of a translation test, is the problem of eliciting those structures that fall under Catford's (1965: 93-103) category of "linguistically untranslatable". These include structures in the NL that have no substitute in the TL and vice versa. Though a competent translator can adequately translate them once the rules of the TL are applied, such structures may prove to be difficult to translate for SL learners, at certain levels of proficiency. In Arabic, for example, there is no special verb form for the progressive as there is in English. The concept of the progressive is expressed periphrastically through the use of adverbs equivalent to those used in English with the imperfect form of the verb. From our experience this structure has always proved too difficult for Arabs learning ESL at certain levels of proficiency.

For the purpose of this research, however, we believe that although translation techniques may somewhat limit the scope of the investigation through the non-existence of certain aspects of the structures, these limitations are not enough to influence the usefulness of this task for tapping the learner's production grammar on explicit and implicit knowledge.

In this study the Translation Task contains 148 English sentences to be translated into Arabic. These sentences include the formation of INTERROGATION and NEGATION in different environments. The sentences from the two syntactic areas are randomly mixed and the task is divided into two parts A and B (refer to Section 5.3.6.).

#### 5.3.4. The Manipulation Task (MT)

The need also arose for a technique that elicits data to support that based on the use of the Translation Task. A task which has



been very widely used is a recognition and correction task. Such a task is used as a means of getting learners or native speakers to reveal what is acceptable in their idiolects. Labov et al. (1975) successfully used this technique to obtain information about the grammar of Black English vernacular speakers.

The sentences in the task use non target forms of the structure under consideration. The learner is required to read each sentence and if he/she considers it not to be good Arabic to correct it. Presumably, if the learner marks a sentence as correct, it means that in his or her grammar this sentence is acceptable. If the sentence is corrected, the correction may be assessed. The learner's correction may still be incorrect in comparison with the TL norm. Alternatively, the correction may be correct. Both these responses give an idea of the learner's grammar. With such a technique the investigator not only gives the learner a chance to recognize his own 'language', but also leaves the door open for him to expose any aspect of his IL the researcher is not aware of. Hence, a grammaticality judgement or recognition and correction task provides the researcher with an access to the learners' intuition about the TL.

#### 5.3.5. Vocabulary Control

The vocabulary items in the two tasks were strictly controlled to ensure their appropriateness. Prior to the design of the elicitation materials, an examination of some of the ASL textbooks used by some of the learners, contacting some ASL teachers as well as discussions with some British friends learning Arabic as an SL, provided a fair idea of the vocabulary range of the learners.

Apart from the vocabulary control, attempts were also made to ensure that the contents of the elicitation tasks were not outside the range of the experience of the learners and so we have used situations, names, places etc. with which the subjects are familiar.

Through the two tasks, the lexical items, the different grammatical environments, tense, number and person are kept consistent.

This approach is mainly to measure the features the investigator is interested in: namely the developmental sequences of NEGATION and INTERROGATION.

#### 5.3.6. Items for each Structure

For each tested item we present a sentence or sentences which are as far as possible "anchored in realistic discourse contexts" (Oller 1979: 239).

As indicated above (Section 5.3.3.) each task is divided into 2 main parts: A: Interrogation, and B: Negation.

##### 5.3.6.1. Interrogation

In the Translation Task, learners are asked to translate 84 interrogative sentences from English into Arabic. In the Manipulation Task, on the other hand, learners are asked to correct the word order of the questions given.

On both tasks, these 84 interrogative sentences include:

1. Yes/No Questions: (18 sentences no 7, 9, 13, 16, 20, 28, 34, 42, 43, 46, 54, 63, 67, 68, 73, 79, 59 and 84). Table (5.1.) shows the division of the 18 Yes/No questions and also gives the items in the tasks which necessitated the formation of Positive and Negative Yes/No question.

Table 5.1.: Division of 18 Yes/No Questions included in the Translation and Manipulation Tasks

Aux Type + Environment		Form of Aux in the Tasks	Items in the Tasks
COP +	ADJ P	IS	46,28,54
		WAS	84
		WERE	73
	NP	IS	42,79
	ADV P	IS	63,43
Modal		CAN	16
Aux 'BE' + V-ing		IS	34,67
Have + V(pp)		HAS	7
		HAVE	68
DO + V (Finite)		DO	20
		DID	59,9
DO + NEG + V (Finite)		DON'T	13
TOTAL			18

Where: COP = Copula; ADJ P = Adjectival Phrase; NP = Noun Phrase;  
ADV P = Adverbial Phrase; Aux = Auxiliary

2. Wh Questions: Divided as follows:

- a. 10 sentences with WHO, (Nos. 1, 11, 18, 21, 33, 35, 51, 60, 69 and 74);
- b. 7 sentences with HOW, (Nos. 2, 19, 37, 45, 53, 61 and 78);
- c. 9 sentences with WHAT, (Nos. 3, 24, 49, 56, 71, 75, 80, 40 and 30);
- d. 9 sentences with WHY, (Nos. 4, 23, 32, 41, 50, 57, 65, 70 and 76);
- e. 9 sentences with WHEN, (Nos. 5, 15, 25, 31, 39, 48, 55, 64 and 83);
- f. 11 sentences with WHERE, (Nos. 6, 14, 22, 26, 29, 38, 47, 58, 66, 72 and 77);
- g. 11 sentences with WHICH, (Nos. 8, 10, 12, 17, 27, 36, 44, 52, 62, 81 and 82).

Refer to Table (5.2.) for division of these 66 (Positive and Negative) WH questions.

Table 5.2: Division of 66 Wh-Questions in the Translation and Manipulation Tasks

ITEMS IN THE TASK										
AUX TYPE	T	NO.	WHERE	WHICH	WHO	WHY	WHEN	WHAT	HOW	TOTAL
COP	PRES	SING.	26,77	10,18	51,74	50		71		8
	PRES	PLUR.	66	52	11	4		75	2	6
	PAST	SING.			21		31,64	40	19	5
	PAST	PLUR.	22						53	2
Cop + NEG							83			1
BE+V-ING	PRES	SING.	6	17	18,60		55	30		6
	PRES	PLUR.							45	1
Have+V pp	PRES	PLUR.	14,58					24,49		4
	PRES	ING.		82	69	65				3
Have+NEG+pp	PRES	PLUR.	72							1
DO + V fin	PAST		47,38	27,36	1,35*	41	15,39	3	37,61	12
	PRES					32	25,48			3
DO+NEG+V fin	PAST			12,44		57,70		80		5
MODAL	PRES		29	8	33		5	56	78	6
	PAST			62		23,76				3
TOTAL			11	11	10	9	9	9	7	66

Where: Aux = Auxiliary; Cop = Copula; V = Verb; Neg = Negative;  
fin = finite;

Pres = Present; Sing = singular; Plur = Plural; T = Tense; No = Number

\* in WHO questions, certainly, Do support is not required

#### 5.3.6.2. Negation

In the Translation Task, learners are asked to translate 64 English negative sentences into Arabic. While, in the Manipulation Task positive statements are supplied and the subjects are asked to change them into negative sentences. In the first 32 sentences, the negative particles are given at the end of each positive statement; whereas in sentences 33-64 the negative particles are not supplied. It is in Part B (Negation) that learners have to make grammatical adjustments. Not all of the subjects have mastered Arabic to such an extent as to fully supply the different required inflections e.g. of the verbs, nouns, adverbs etc.

The 64 negative sentences include:



1. Verbal sentences negation:

- a) 16 sentences indicate the PAST tense (Nos.5, 9, 10, 15, 17, 19, 25, 26, 31, 34, 38, 45, 48, 54, 55 and 56);
- b) 17 sentences indicate the PRESENT tense (Nos.6, 8, 16, 18, 22, 27, 32 33, 35, 43, 44,47, 53, 58, 62, 63 and 64);
- c) 14 sentences indicate the FUTURE tense (Nos. 1, 2, 3, 11, 12, 20, 21, 30, 39, 40, 51, 52, 59 and 61).

2. Equational sentences negation:

This includes 17 sentences (Nos. 4, 7, 13, 14, 23, 24, 28, 29, 36, 38, 41, 42, 46, 49, 50, 57 and 60). See Table 5.3. for division of these 64 negative sentences.

Table 5.3.: Division of 64 Negative Sentences in the Two Tasks

Aux Type	ITEMS IN THE TASKS			
	EQUATIONAL SENTENCES	VERBAL SENTENCES		
	Laysa (present)	la: (Present t)	lan (Future t)	lam (Past t)
ADJ P  COP+Neg+ NP  ADV P	57,49,41,4,46,14 23,36,37,28,24			17,38
	60,50,7,13*,29			10
	42			26
'BE'+Neg+V-ing			(plural) 20,52,59,12	
			(singular) 1,2,11,21,30 40,51,61,3	
DO+Neg+V(Fin)		(DO) 64,44,43, 33,18,16,6		5,9,15 25,34,45
		(DOES) 63,62, 53,22,32		56
Modal+Neg+V(Fin)		58,47,35,27, 8	39	55, 31,19
Have + Neg+V(pp)				48,54
TOTAL	17	17	14	16

Where: Aux = Auxiliary; COP = Copula; V = Verb; Neg = Negative; Fin = Finite;

ADJ P = Adjectival Phrase; ADV P = Adverbial Phrase; pp = Past Perfect; t = tense.

\*Sentence 13 could be translated either into "there is" in which learners have to supply  
 {/laysa: + hunaka/} (not there), or simply using /laysa + fi/.  
 {/la: + yujed/}

#### 5.4. DATA COLLECTION

The starting point was contacting all British universities that teach ASL asking for their co-operation by providing learners of Arabic for a research purpose. Those universities which expressed their willingness to help were further approached. The others were excluded.

The fieldwork investigation and data collection were carried out by the author in the academic year 1984-'85. All learners were contacted personally. Some were met in their classes. Others, in different places of their universities, e.g. libraries, common rooms, refectories etc.

The subjects were taken from the various universities previously mentioned (Section 5.2.2.). The investigator impressed on all of them that the tasks were not examinations and that they were free to leave if they were not interested, since they would be expected to complete all the exercises.

The task of obtaining the data was more difficult in some centres than the others. On the whole, however, most lecturers encouraged their students to co-operate.

To avoid an overmonitoring the subjects were urged to spontaneously write down the answers as quickly as possible. Although the subjects were pressured for time, no exact time limit was set, as writing speed, like talking speed, was felt to be a highly individual characteristic which should not be stereotyped.

Generally speaking, the learners took relatively more time to answer the Translation Task, since they had to translate and this means to rewrite all sentences. Whereas in the Manipulation Task the learners' task was easier: they corrected the order, if wrong, by using numbers or arrows.

As for vocabulary, most of the learners were familiar with all the lexicons included in the tasks. Learners were told to leave space for unknown words, but there were only very few blanks

left. This however, did not affect the aims of the investigation, since our emphasis was on the acquisition of some features of syntax and not the acquisition of vocabulary.

The learners were assured that the information given by them would be treated as strictly confidential and that their performance on these tasks would in no way affect their assessment of university examinations. Thus, they were told to give false names, if they did not want to reveal their true names. Furthermore, the testees were encouraged to attempt all the questions to the best of their knowledge and not to leave any question unanswered. Also, help, namely giving the meaning of unknown word(s), was extended whenever asked for.

#### 5.5. CRITERIA FOR ASSESSMENT

In a study in which one is dealing with variation and moreover expects a great deal of variation to occur, a fundamental and crucial question is: On what basis would one know what to count and what to discount when analyzing data?

Most investigators concerned with SL learning are fundamentally interested in the learning process. The vast literature concerned with SLA is aimed at trying to discover the orderliness (or lack thereof) of the learning process as reflected in the gradual acquisition of various structures, as the case in this study, or phonological features over time. If similarities are observed, some sort of universal, i.e. a central tendency, of stages in acquiring any particular structure through several IL steps can be constructed.

If the early forms are incorrect, the intermediate forms a mixture of correct and incorrect forms, and the final forms correct, then, we need criteria for assessing as well as ways of analyzing the data that do not throw away incorrect responses but will allow us to see incorrect forms as steps building towards a final resolution of the systactic system.

Our criteria (and analysis) then, would not necessarily look at



items and judge them as RIGHT or WRONG, but rather might say that "this is the form(s) used in Stage 1, this is the form(s) used in Stage 2, and so on".

Now it is necessary to outline the criteria used in assessing learners' responses, before presenting the results obtained from the analysis of these responses. In the following sections the examples are first given in Arabic, then, a literal English translation is given.

#### 5.5.1. Interrogation

- i) In the area of Positive WH-questions and Positive Yes/No questions:
  - (1) No mark was given for non occurrence of Question-Particle (QP)
 

e.g. /fi ayy šakl tasalamat mary Xita:b/  
in what kind received Mary letter  
(Sub. No. 4, How Qs. Q. No. 37, TT) 4
  - (2) One mark was given for:
 

+ occurrence of QP  
e.g. /Marriam talaqat kayfa alrisalah/  
Marriam received how the letter  
(Sub. No. 24, How Qs. Q.No. 37, TT)
  - (3) Two marks were given for:
 

+ occurrence of QP  
+ correct place of QP  
e.g. /kayfa marriam talaqat alrisalah/  
how Marriam received the letter  
(Sub. No. 33, How Qs. Q. No. 37, TT)
  - (4) Three marks were given for:
 

+ occurrence of QP  
+ correct place of QP  
+ correct order of words in the sentence  
e.g. /ayya sayairh taḥmeluha (present) ila: almadrasah/  
which car carry her to the school  
(The verb should be in the past tense)  
(Sub. No. 18, Which Qs. Q. No. 8, TT)

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4. In Arabic, How means /kayfa/; while /ayya/ means Which.

(5) Four marks were given for:

- + occurrence of QP
- + correct place of QP
- + correct order of words in the sentence
- + correct inflection

e.g. /ayya sayairh aqalatha: ila: almadrasah/  
which car took her to the school  
(Sub No. 19, Which Qs. Q. No. 8, TT)

ii) For the sentences which required the use of Negative WH-questions and Negative Yes/No questions:

(1) No mark was given for non-occurrence of QP

e.g. /laka şaihib/ 5  
have you friend  
(Sub. No. 11, Neg. Yes/No Qs. Q. No. 13, TT)

(2) One mark was given for:

- + occurrence of QP (for Neg Yes/No questions both /hal/ and /?/ were accepted. The correct form however, for Neg. Yes/No Qs is / ?/+ Neg. particle)

e.g. /hal ladayk rafiğ/  
QP have you friend  
(Sub. No. 3, Neg Yes/No QS Q. No. 13, TT)

(3) Two marks were given for:

- + occurrence of QP
- + any form of Neg.P.

e.g. /lam yufleğ limağa:/  
not (past) can he why  
(Sub. No. 3, Neg. Why Qs Q. No. 70, TT)  
/la: harab limağa:/  
not (pres.) escaped he why  
(Sub. No. 38, Neg. Why Qs., Q. No. 70, TT)

(4) Three marks were given for:

- + occurrence of QP
- + any form of Neg.P.
- + correct place of QP

e.g. /limağa: jo:n la: yaktub/  
why John not (pres) write  
(Sub. No. 9, Neg. Why Qs. Q. No. 57, TT)  
/ayya Xita:b marriam la: tursloh/  
which letter Marriam not (pres.) send  
(Sub. No. 4, Neg. Which Qs. Q. No.44, TT)

(5) Four marks were given for:

- + occurrence of QP
- + any form of Neg.P.
- + correct place of QP
- + correct word order of the whole sentence

---

5. This expression uttered with a raising intonation is an acceptable question. Refer to Chapter 7 for interpretation and discussion.

e.g. /ʔfla: laka ʃadyq/  
 QP Neg.P. have you friend  
 (Sub. No. 54, Neg Yes/No Qs. Q. No. 13, TT)  
 /limaʃa: la: ʔʃtata:ʔ an yafer/  
 Why not (pres.) can he (to) escape  
 (Sub. No. 36, Neg. Why Qs. Q. No. 70, TT)

(6) Five marks were given for:

- + occurrence of QP
- + correct place of QP
- + correct word order of the sentence
- + correct Neg.P.

e.g. /ʔalaysa laka ʃata ʃadyq (masc.) waʃaydah (fem.)/  
 QP Neg.P. have you ever friend one  
 (Sub. No. 47, Neg. Yes/No Qs. Q. No. 13, TT)

(7) Six marks were given for:

- + occurrence of QP
- + correct place of QP
- + correct word order of the sentence
- + correct Neg.P.
- + inflection

e.g. /ʔalaysa laka ʃadyq/  
 QP Neg.P. have you friend  
 (Sub. No. 23, Neg. Yes/No. Qs. Q. No. 13, MT)

It should be noted here that, although the same criteria were used to score the Manipulation Task, learners gave an advantage to the latter. Since the correct QPs were given and the correct inflection was supplied, the learners' task was a question of putting the QPs in their correct places, and correcting the word order of the sentences.

### 5.5.2. Negation

i. In judging the acceptability of negation: namely /la:/, /lam/ or /ma:/ and /laysa/, the criteria below were followed:

(1) No mark was given for non-occurrence of Neg.P., i.e. use of positive sentences.

e.g. /mamno' taktub 'la: jeda:r/<sup>6</sup>  
 forbid write on wall  
 (Sub. No. 13, /la: / Negation, sentence No. 8, TT)

(2) One mark was given for:

- + occurrence of any form of Neg.P.

e.g. /la: ʔXbarani/  
 not (pres.) told me  
 (Sub. No. 22, /lam/Negation, Sent. No. 5, TT)

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6. More examples of such avoidance are given in Section 5.5.3. See Chapter 7 for interpretation and discussion.

- (3) Two marks were given for  
 + occurrence of correct form of Neg.P.  
 e.g. /ta:jer həlyb ma: hədr/  
 merchant milk not (past) came  
 (Subj. No. 22, /lam/ Negation, Sent. No. 25, TT)
- (4) Three marks were given for:  
 + occurrence of correct form of Neg.P.  
 + correct place of Neg.P.  
 e.g. /laysa qədyrah alʔa:irah/  
 not old the plane  
 (Sub. No. 11, /laysa/ Negation, Sent. No. 49, TT)
- (5) Four marks were given for:  
 + occurrence of correct form of Neg.P.  
 + correct place of Neg.P.  
 + correct word order  
 e.g. /laysa (masc.) alʔa:şəmah (fem.) kabyr (masc.)/  
 not the capital big  
 (Sub. No. 5, /laysa/ Negation, Sent. No. 14, TT)
- (6) Five marks were given for:  
 + occurrence of correct form of Neg.P.  
 + correct place of Neg.P.  
 + correct word order  
 + inflection.  
 e.g. /laysat (fem.) alʔa:şəmah (fem.) kabyr (fem.)  
 not the capital big  
 (Sub. No. 42, /laysa/ Negation, Sent. No. 14, TT)
- ii) In assessing the responses to the future negative particle  
 i.e. /lan/ different criteria were used. This was thought  
 to be necessary, since the acquisition of /lan/ was found to  
 be different from the other negative particles (see Chapters  
 6 and 7 for details).
- (1) No mark was given for non-occurrence of Neg.P.
- (2) One mark was given for:  
 + occurrence of any form of Neg.P.  
 e.g. /ma: yaktbu:n ʔai/  
 not (Present/Past) write they thing  
 (Sub. No. 17, /lan/ Negation, Sent. No. 52, TT)
- (3) Two marks were given for:  
 + occurrence of  $\left\{ \begin{array}{l} /la:/ \\ /ma:/ \end{array} \right\} + \left\{ \begin{array}{l} /sa-/ \\ /sawfa/ \end{array} \right\}$   
 or  
 $\left\{ \begin{array}{l} /sawfa/+ \\ /la:/ \\ /ma:/ \end{array} \right\}$   
 e.g. /la: sayaktbu:n ayy ʔai/  
 not (pres.) will write any thing  
 (Sub. No. 1, /lan/ Negation Sent. No. 52, TT)

e.g. /sawfa la: yaktbu:n hum <sup>✓</sup>sai/ 7  
 will not write they they thing  
 (Sub. No. 29, /lan/ Negation, Sent. No. 52, TT)

- (4) Three marks were given for:  
 + occurrence of /lan/ +  $\left\{ \begin{array}{l} /sa - / \\ /sawfa/ \end{array} \right\}$   
 e.g. /lan sayal'b/  
 not (future) will play  
 (Sub. No. 21, /lan/ Negation, Sent. 20, TT)

- (5) Four marks were given for:  
 + occurrence of /lan/  
 e.g. /ʔahmed lan yaʔty/  
 Ahmed not (future) come  
 (Sub. No.44, /lan/ Negation, Sent. No. 1, TT)

- (6) Five marks were given for:  
 + occurrence of /lan/  
 + correct place of Neg.P.  
 e.g. /lan yaktub <sup>✓</sup>sai hum/  
 not write thing they  
 (Sub. No. 14, /lan/ Negation, Sent. No. 52, TT)

- (7) Six marks were given for:  
 + occurrence of /lan/  
 + correct place of Neg.P.  
 + correct word order in the sentence  
 e.g. /lan yaktbu: <sup>✓</sup>sai/  
 not write they thing  
 (Sub. No. 8, /lan/ Negation, Sent. No. 52, TT)  
 /lan taku:n (fem.) ʔalʔmr (masc.) sa'b (masc.)/  
 not be the issue/matter difficult  
 (Sub. No. 16, /lan/ Negation, Sent. No. 61, TT)

- (8) Seven marks were given for:  
 + occurrence of /lan/  
 + correct place of Neg.P.  
 + correct word order in the sentence  
 + inflection  
 e.g. /lan yaktbu: <sup>✓</sup>sayan/  
 not (future) write they thing  
 (Sub. No. 23, /lan/ Negation, Sent. No. 52, TT).  
 /lan yakuina ʔalʔmr sa'ban/  
 not be the issue/matter difficult  
 (Sub. No. 23, /lan/ Negation, Sent. No. 61, MT)

The same criteria were used to score negation in the Manipulation Task. As mentioned above (Section 5.3.6.2.) in the first 32 sentences, the correct negative particles were supplied at the end of each sentence. In sentences 33 – 64, the negative particles were not given. Thus, in contrast with INTERROGATION on the Manipulation Task, learners had to supply the correct Neg.

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7. Notice that the subject is inflected twice for number.

particles, the correct word order and to make grammatical adjustments.

Another point to explain here is that, in our criteria for Interrogation and Negation, we scored inflection as correct if the learner correctly marked tense, number, person and gender of the verb.

### 5.5.3. Some Reservations

Despite the care taken in designing and composing the sentences in the tasks, it was still possible for subjects to occasionally avoid the necessity to use the expected form/structure. For instance, sentence 46: God is not unjust was translated into /allah 'a:del/ (God is just) by Subject No. 55. Sentence 49: The plane is not old was translated into /alṭa:ʔirah jadidah/ (The plane is new), by Subject No. 22.

Such cases, however, were minor and did not seem to involve the intentional avoidance of difficult aspects of syntax, but rather represented the facility of those subjects and their ability to produce alternative solutions yielding correct sentences with similar meanings. Certainly, double negative means positive. However, these responses were treated as examples of avoidance strategy. (See Section 5.5.2.). As mentioned above this unintentional avoidance was minor and generally only affected one item from a total of 64. This did not distort the learner's overall scores to any significant extent.

Since, in each area of the structure investigated, the number of items was not always identical, the results were adjusted accordingly. For accuracy acquisition orders and implicational scaling, the percentages of instances of 'correct' use of form of each structure were calculated. If a variant was overgeneralized, it was considered 'correct' in the instances where it is supposed to be used and 'incorrect' elsewhere.

Bearing in mind the aims of this study (Chapter 1), certain errors were ignored:

A. ORTHOGRAPHIC AND PHONOLOGICAL ERRORS: Orthographic errors were ignored on the phonological level only. Other spelling errors which invalidated the inflection of a word were not accepted. Students' mistakes in this category were the result of confusion in the following:

#### I Contrasts Involving Non-English Consonants:

- 1) Emphatics, such as the use of non-emphatic instead of emphatic consonants:
  - a) s for ṣ: e.g. /qaseir/ instead of /qaṣeir/(short), and /saif/ for /ṣaif/ (Summer) (Subject No. 10).
  - b) t for ṭ: e.g. /qatah/ instead of /qaṭah/ (cut) (Subject No. 10). Note that the last letter of the second word should be /'/ instead of /h/.
  - c) d for ḍ: e.g. Subjects Nos. 31, 29 and 28 translated /mari:ḍ/ (sick) as /mari:d/.

#### 2) Velar and pharyngeal fricatives

For example:

- a) h for ḥ: /Kuḥel/ was translated into /Kuhel/ and /tuḥeb/ (love) (verb), was translated into /tuheb/ by Subject No.9.
- b) /'/ was substituted by a glottal stop/?/ e.g. /ʔayn/ instead of /'ayn/ (an eye) (Subject No. 7), and /aby'/' was translated as /aby?/' by Subject No. 3.

Surprisingly enough, some students reversed the order of the contrast, thus producing:

- (a) /ṣafyr/ instead of /ṣafyr (ambassador) (Subject No. 11).
- (b) /fawakḥ/ instead of /fawakḥ/ (fruit) (Subject No. 9).
- (c) /'abdan/ instead of /ʔabadan/ (never) (Subject No. 18).
- (d) /ṭufa:hait/ instead of /ṭufa:hait/ (apples) (Subject No. 11).
- (e) /q/ for /k/ e.g. Subject No. 15 translated /kurah/ (ball) into /qurah/.

#### II Vowel Length

Some learners tended to use long vowels in place of short vowels and vice versa.



Examples:

(a) a → a : /mudaris/ مدرس (teacher) → /mada:ris/ مدارس (schools) (Subject No. 8).

(Notice that the second vowel is shown, when necessary, by vowel marks). /sainama/ was translated as /saina:ma/ by learners Nos. 8 and 9.

(b) a: → a : /risa:lah/ (letter) was rewritten as رسالة /risalah/ (Subject No. 4)

### III Dot Confusion

Some learners omitted dots e.g. يشتري (buy) was written as يسري by Subject No. 43. Other learners confused dots that go above the letter with those that go below: يلعب (play) was written as يلعن (Subject No. 50).

B. LEXICAL ERRORS: The errors in this category cover the following:-

#### I Omissions

Some learners omitted words in the Translation Task. This was due to student's failure to produce the Arabic term (refer to Section 5.4.).

#### II Additions

Some students added words to emphasize the required meanings for example: Learner No. 5 translated Sentence No. 9: The plane did not arrive into /lam taʃel alʔa:ʔirah ba'd/, the underlined word which means yet/till now, was added by the subject to emphasize the meaning. It could also be that the student added the underlined word to emphasize the difference of meaning between The plane has not arrived yet as opposed to The plane did not arrive. Student No. 19 added /almaɖy/ (the last) in his translation of Sentence No. 48: I haven't seen him since Friday, producing the following sentence /ma:raʔytah munʔyawmi aljum'ah almaɖy/ (I haven't seen him since last Friday).

However some added words were scored as errors. For instance, the translation of the pronouns: he, she, they, etc. separately from the verb was considered as being a step in the learner's stages of development towards the TL. Thus, those who translated Sentence No. 3: I am not going into /a?na lan a?ħhab/ (lit. me not going) scored less than those who translated the same sentence into /lan a?ħhab/ since when the subject is a pronoun, it is not realized in the surface structure of the sentence, but is manifested by the inflection of the verb (refer to Section 4.2.6.2).

### III Wrong Diction

Learners used vocabulary items altogether wrong in the Translation Task. For instance, /alşboirah/ (blackboard) was translated as /alwaraqah/ (paper) by Learner No. 7, and /yunaħf/ (clean) was translated as /yukannes/ (brush) by the same learner.

### IV Wrong Word Connotations

Learners invented new words to carry the required meaning e.g. learner No. 14 translated Sentence No. 45 /lam yastame' ila: almudarris/ (He did not listen to the teacher) as /lam ya?ħan .../. In Arabic the noun /?oħn/ means ear, so the learner added /ya-/ to the stem and omitted the /o/ vowel to coin a new word, which he meant to mean (listen). However, the Arabic meaning for /ya?ħan/ is (to permit). Subject No. 54 coined a new adjective /šamisan/ (sunny) from the Arabic noun /šamis/ (sun). The Arabic word for sunny is /mušriq/ or /mušmis/.

Other learners used, incorrectly, known words to convey the required meaning. For instance /kasara/ (break) was used to translate /mazaqa/ (tear) by learners No. 55 and 56. Learner No. 56 translated /ba:? ' alħalyb/ (milkman) into /ħama:l .../ (carrier/porter).

## V Colloquialisms

Exposure to colloquial Arabic influenced some learners to use colloquial terms, probably when they were unable to produce the proper literary terms, e.g. /qiṭaṭ/ (cats) was translated as /kada:ʔis/ (cats in Sudanese dialect) by Subject No.1. Also the verb /ʔaturiduny/ in the Question No. 20 Do you want me to stay with you? was translated inot /'ayzni/ (Do you want me ... ) in Egyptian Arabic by Learner No. 7.

## VI Use of English Vocabulary

Use of English in place of Arabic vocabulary was not very frequent. Some cases, however, did occur. For example /kurat alqadam/ (football) was transliterated into /fotbu:l/; /atelvaz/ or /altelivizyu:n/ (television) was transliterated into /televijen/.

CHAPTER SIX  
DATA ANALYSIS

6.0. INTRODUCTION

In this Chapter we present the results of the performance of our learners on the elicitation tasks. The subjects' responses on each of the tasks were scored in accordance with the criteria for assessment discussed in Section 5.5. Then, the results were examined along different dimensions (e.g. Level/Time, Task and Structure).

First, the overall performance of the learners in the five groups (according to proficiency level) are presented. Second, comparisons between the subjects' performance on the two tasks are carried out. Lastly, the results for the groups and the individual learners within the groups in each of the structural areas and for the interrelationship of the areas are presented.

6.1. PRELIMINARY ANALYSIS OF THE DATA

Our first task was an overall evaluation of the performance of our learners on both elicitation tasks and an overall summary of the results by Learning Level (i.e. the stage of exposure to Arabic) and by Structure (i.e. Negation and Interrogation).

In order to have comparisons of performance on the two main structures, the scores are computed in percentages. Therefore, all our results are presented in percentages (raw data are presented in Appendix 3.1.). Percentages were used because the criteria for assessment and the number of items on the two syntactic areas were not identical. Standardization of raw scores (i.e. converting raw scores into Z scores) was deemed unnecessary. Since Z scores are for comparisons between different types of tests in the sense that each kind of test measures certain 'skills', (e.g. reading, speaking, writing etc). In our case, the data are comparable (without the need for Z scores), since the same number of variables, the same vocabulary and the same structure are used on both tasks.

Percentages were calculated (manually and by the computer) as follows:

$$\frac{\text{scores obtained by the learner} \times 100}{\text{the complete score}}$$

The complete scores for each structural area are supplied below:

### 1. Negation

- A. /la:/: the total/la:/ = 85  
(there are 17 sentences on each task).
- B. /lam/: the total/lam/ = 80  
(there are 16 items on each task).
- C. /lan/: the total/lan/ = 98  
(there are 14 sentences on each task).
- D. /laysa/: the total/laysa/ = 85  
(there are 17 items on each task).
- E. Grand total negation: That is the learner's performance on the four negative particles together. The complete score = 348. The number of negative sentences on each task is 64.

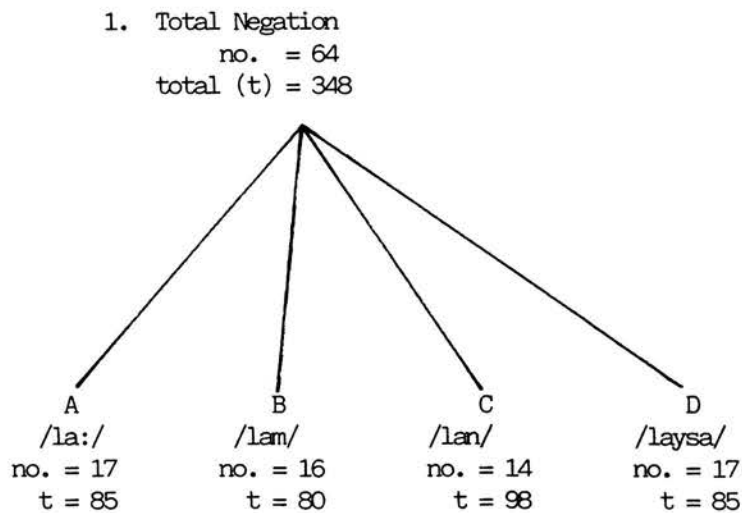
### 2. Interrogation

- A. Positive Wh. Qs.
  - (i) How Qs.: the total How Qs. = 28  
(there are 7 sentences of this variable on each task).
  - (ii) Why Qs.: the total Why Qs. = 28  
(there are 7 sentences on each task).
  - (iii) What Qs.: the total What Qs. = 32  
(there are 8 items on each task).
  - (iv) When Qs.: the total When Qs. = 32  
(there are 8 items on each task).
  - (v) Where Qs.: the total Where Qs. = 40  
(there are 10 sentences on each task).
  - (vi) Which Qs.: the total Which Qs. = 36  
(there are 9 items on each task).
  - (vii) Who Qs.: the total Who Qs. = 40  
(there are 10 sentences on each task).
- B. Negative Wh. Qs.
  - (i) Which Qs.: the total Neg. which Qs. = 12 (2 sentences on each task).
  - (ii) What Qs.: the total here = 6 (1 sentence on each task).
  - (iii) Why Qs.: the total = 12 (2 sentences on each task).
  - (iv) When Qs.: the total = 6 (1 sentence on each task).
  - (v) Where Qs.: the total score is 6 (1 sentence on each task).

- C. Positive Yes/No Qs.: the total score = 68 (there are 17 sentences on each task).
- D. Negative Yes/No Qs.: the total here = 6 (1 sentence on each Task).
- E. Grand Total of Positive Qs.: the learners' performance here was calculated by adding Positive Wh- Qs. and Positive Yes/No Qs. The total here = 304 (there are 76 items on each task).
- F. Grand Total of Negative Qs.: This was calculated by adding Negative Wh. Qs. and Negative Yes/No Qs. The total = 48, (there are 8 negative Qs. on each task).
- G. Grand Total Qs. = This was calculated by adding E and F above. This reveals a total of 352. There are 84 interrogative sentences on each task.

(Figure 6.1. summarizes the above Section).

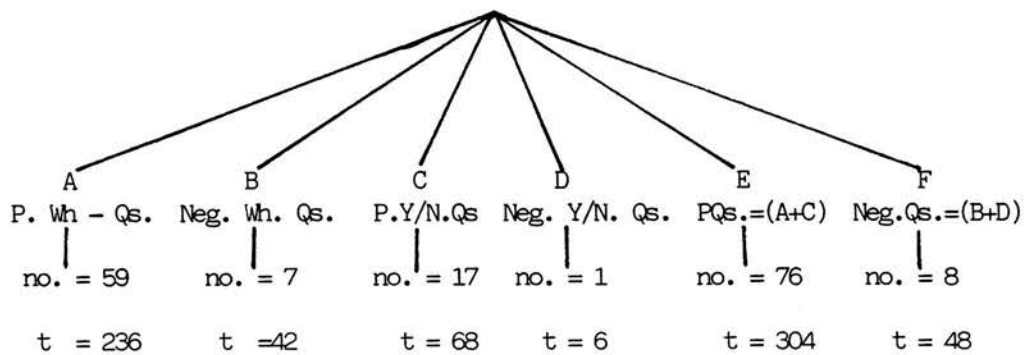
Figure 6.1: Number of Items and Total of each Negative and Interrogative Particles



2. Total Interrogation = A + B + C + D (below)

no. = 84

t = 352



i) How  
no. = 7  
t = 28

(i) Which  
no. = 2  
t = 12

ii) Why  
no. = 7  
t = 28

(ii) What  
no. = 1  
t = 6

(iii) What  
no. = 8  
t = 32

(iii) Why  
no. = 2  
t = 12

(iv) When  
no. = 8  
t = 32

(iv) When  
no. = 1  
t = 6

(v) Where  
no. = 10  
t = 40

(v) Where  
no. = 1  
6 = 6

(vi) Which  
no. = 9  
t = 36

(vii) Who  
no. = 10  
t = 40

### Overall Results

Table 6.1. and Figure 6.2. below give a summary of the overall results. These results were obtained through the use of Bio-medical Package (1983) (henceforth BMDP) subprogramme Analysis of Variance (ANOVA) in which every individual's performance was programmed with the Level (refer to Section 6.2.2.1.).

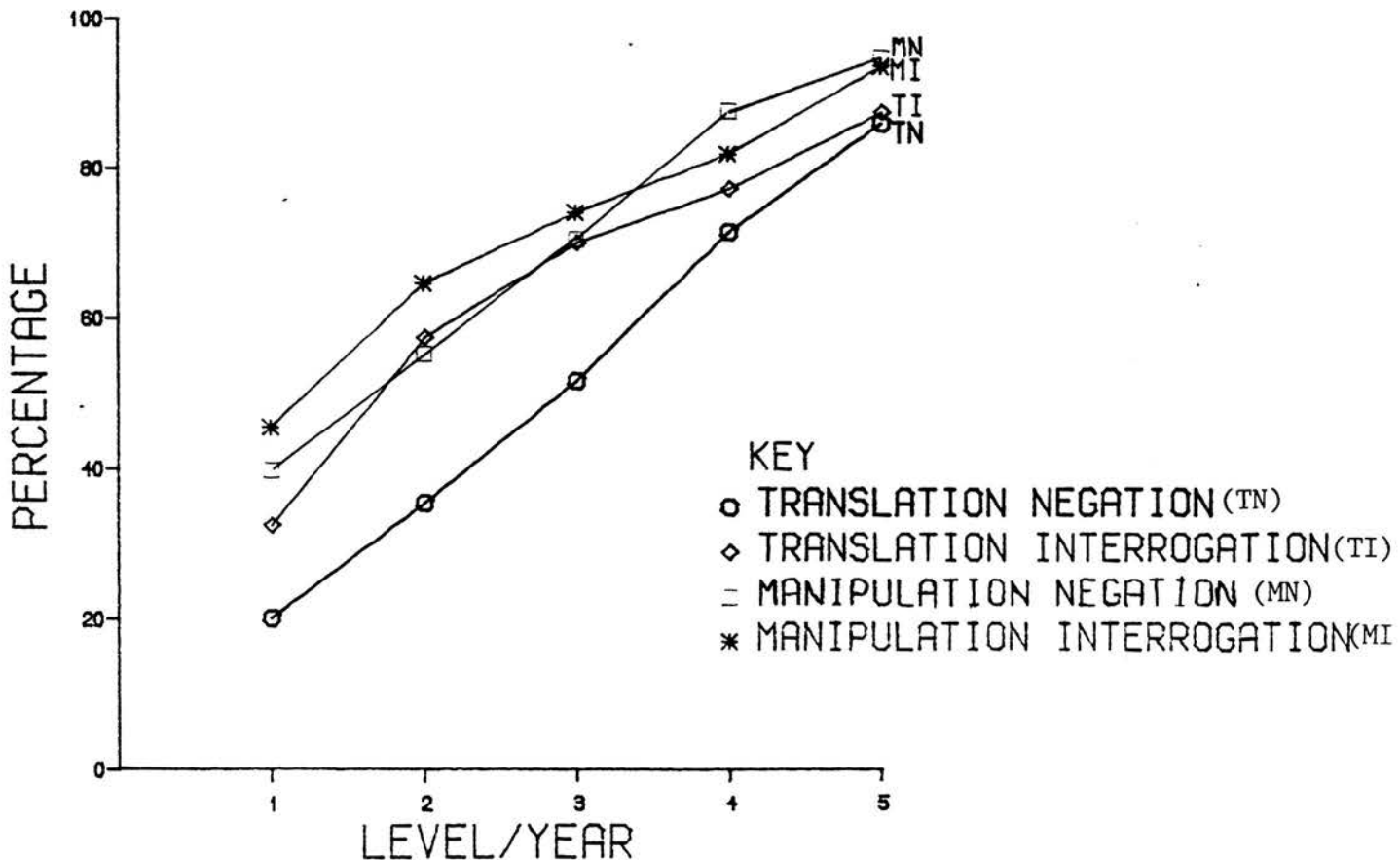


Table 6.1: ANOVA Overall Results

			MARGINAL				
LEVEL	TASK	STRUC	A	B	C	D	E
B1C1	1	1	20.17249	35.39699	51.64572	71.57566	86.23888
B1C2	1	2	32.47169	57.46390	70.01545	77.31999	87.68955
B2C1	2	1	39.79889	55.32917	70.55908	87.71549	94.98710
B2C2	2	2	45.48289	64.54036	74.01854	81.91291	93.71855
MARGINAL			34.48149	53.18261	66.55970	79.63101	90.65852
COUNT			10	11	11	12	9

Where B1C1 = Translation Negation  
 B1C2 = Translation Interrogation;  
 B2C1 = Manipulation Negation;  
 B2C2 = Manipulation Interrogation  
 A, B, C, D and E = 1st, 2nd, 3rd, 4th and 5th -  
 (post grad.) year students.

Figure 6.2. Means of Overall Performance



Within this overall result is the fact that learners' performance varied on:-

- 1) Time dimension: (i.e. variability according to Level/Class). Looking at Table (6.1.) and Figure 6.2., we observe a considerable variation on the amount of movement that takes place between the five levels for the structural areas in question (namely: Negation and Interrogation) on the two tasks.
- 2) Tasks: (i.e. variability according to the two tasks: Translation and Manipulation). The latter seems to be easier than the former. Moreover, although there is no one to one correspondence on individual performance, not a great deal of variation in difficulty order is observed on the two tasks within the same structure.
- 3) Structure: (i.e. variability according to the syntactic areas under investigation: Negation and Interrogation). Table 6.1. shows that learners' performance on Interrogation is better than that on Negation on both tasks. This is true for the overall performance and for all levels on both tasks except in Levels 4 and 5 on Manipulation Task (the issue is further discussed in Sections 6.3. and 6.4.).

## 6.2. VARIABILITY ACCORDING TO TIME (LEVEL/YEAR OF LEARNING)

In this section we will investigate the influence of the Time factor on the developing system of Interrogation and Negation in learners' IL(s). This is based on the theoretical notion that IL(s) or transitional competence(s) develop and increase in complexity as a result of time spent in learning the SL. This hypothesis is testable, thus its null hypothesis is stated as follows:

H<sub>0</sub> 6.1. There is no significant difference in the performance scores at each level. Hence, the extent of complexity of the transitional grammars of students in Year 1 to 5 is the same.

### 6.2.1. Calculation of Means of Percentages of Performance Scores for each Level

Following the criteria for assessment outlined above (Section 5.6.), the subjects' overall production was scored on each task.

This yielded what has been called the Acquisition Score for each learner.

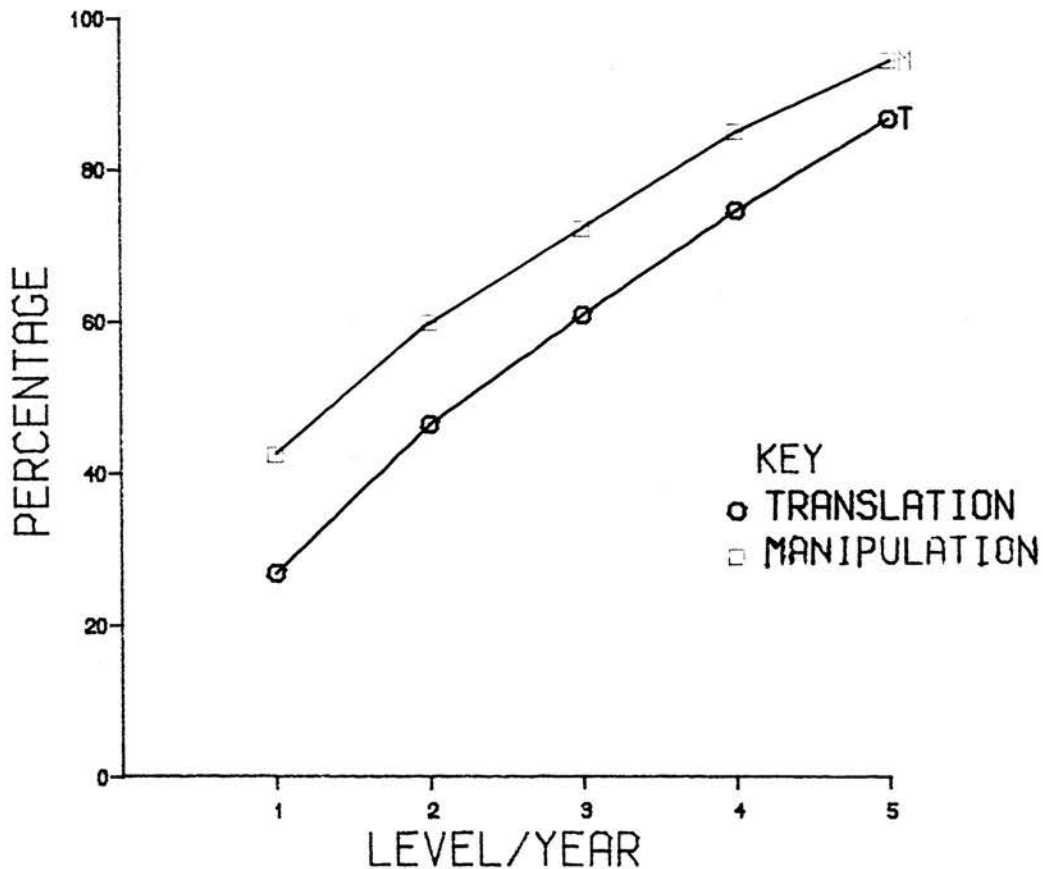
It was obtained by adding the scores for the two main syntactic areas (i.e. Total Negation + Total Interrogation), yielding in percentage form a measure of the learners' overall performance (See Appendix 3.2. for the scores obtained).

The results are summarized in Table 6.2. Also, the means of scores are displayed graphically in Figure 6.3.

Table 6.2. Means of Percentages of Acquisition Scores

Level	Task	
	Translation	Manipulation
1	26.992	42.658
2	46.494	59.961
3	60.869	72.299
4	74.560	84.976
5	86.643	94.349

Figure 6.3. Means of Percentages of Acquisition Scores on Each Task



It is worthwhile noting here that the results displayed in Table 6.2. and Figure 6.3. are obtained through the use of Statistical Package for the Social Sciences (SPSS) subprogramme 'Breakdown'. Here again, every individual's performance was programmed with Level.

In SPSS, the command Breakdown is used with one-way ANOVA. Breakdown command does actually break the data into components in terms of the variables (here: the percentage of Acquisition Scores by Levels). Since this programme has the ability to deal with missing data, there were 109 subjects (56 learners on Translation and 53 on Manipulation). However, with BMDP ANOVA programme missing values had to be excluded since this programme does not have the ability to deal with missing values, thus there were 106 learners, 53 in each subfile. (A slight difference was observed between the outputs). (Refer to Appendices 3.4. and 3.5.).

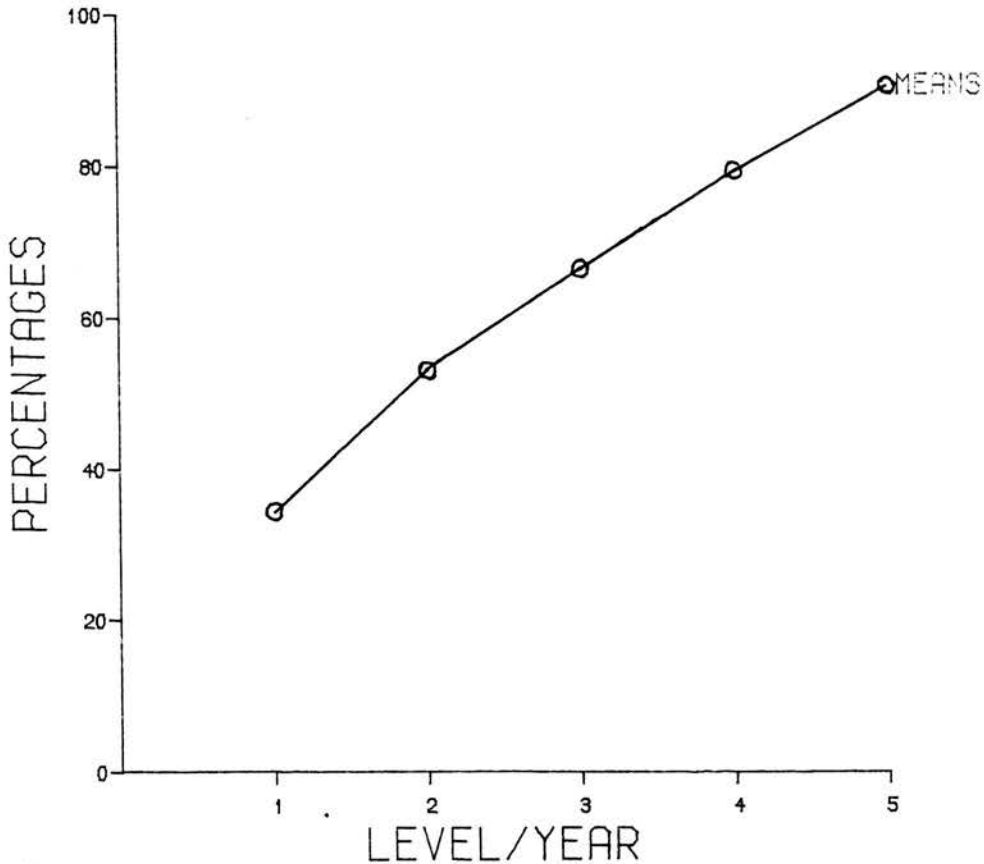
Coming back to our main topic in this section - development due to Time - if we were to ignore the differences between the two tasks and merely concentrate on the 5 Levels, we get the following means (refer to Table 6.1.).

Table 6.3. Means of Acquisition Scores (the 2 tasks and the 2 structures combined)

L1.	34.48
L2.	53.18
L3.	66.56
L4.	79.63
L5.	90.66

The means of scores were also plotted on a graph (Figure 6.4.).

Figure 6.4. Development due to Time (Task, and Structure Combined)



Examination of the figures in Tables 6.2. and 6.3.; and Figures 6.3. and 6.4. gives a picture of the continuous progress from Levels 1 to 5 on each of the tasks as well as development over time when the two tasks are combined (Table 6.3.).

#### 6.2.2. Tests for Significant Differences

##### 6.2.2.1. Analysis of Variance (ANOVA)

Statistical differences between the 5 levels were mainly ascertained by the use of analysis of variance. Following Guilford and Fruchter (1978: 223-224) and Hatch and Farhady (1982: 119), ANOVA as a statistical test was chosen for the following reasons:

- A. Practically speaking, ANOVA is a simultaneous test from which the researcher can conclude whether the whole distribution of the obtained sampling statistics could have happened by chance. Since it is a single composite test, it is useful for our complicated sample with the three main factors under investigation. T-tests can only be used for 2 pairs comparison at a time, therefore, investigating the effect of the first factor (Time) would involve 20 comparisons of Levels on the 2 tasks, let alone, the endless comparisons of interaction between Level and Structure or between Structure and Task.

ANOVA, then, permits the user to overcome the ambiguity involved in assessing significant differences when more than one comparison is made. It allows us to answer the question whether there is an overall indication that the experimental treatments (the different factors) are producing differences among the means of the various groups.

- B. Besides the reason given above, there are some important statistical considerations, for example:
- i) Multiple T-tests comparisons (i.e. comparing mean 1 with mean 2, mean 1 with mean 3, mean 2 with mean 3 etc.) must not be carried out (Hatch and Farhady 1982: 119). ANOVA procedure, then, is more appropriate to make cross comparisons in order to test for significant differences.
  - ii) Since our data is on an interval scale, ANOVA is considered to be a more appropriate test than Chi-square which is mainly for nominal data (and uses with frequencies not percentages).
  - iii) The F statistic from ANOVA is applicable both to large and small samples (Guilford and Fruchter 1978: 165); hence it is appropriate for use in this investigation, because hypothesis testing is sometimes on a larger sample (No. = 106: performance on the 2 tasks combined); and sometimes on a smaller sample (No. 53: performance on each task).

- iv) The F statistic test is "robust" (Robson 1973: 81) and can be used even when the distribution is not normal.

#### Factorial Designs (FD) and ANOVA

Having considered our reasons for using ANOVA, we will outline why 2/3-Way ANOVA or Factorial Designs have been used (rather than 1-Way ANOVA) in most cases in this study. First, however we will discuss the FD procedure: the logic behind hypothesis testing here is exactly the same as in 1-Way ANOVA, except that we have to consider more variance components than before. As Hatch and Farhady (1982: 151) put it:

"[FD are] used to investigate the relationship between one dependent variable and 2 or more independent variables, each of which may have several levels. [...] They are called factorial designs because they involve 2 or more factors".

The simplest factorial design has two independent variables, each with two levels. One of our independent variables is Task with 2 levels (Manipulation and Translation), and the second independent variable is Structure, which also has 2 levels (Negation and Interrogation). Graphically this is displayed as follows:

		STRUCTURE	
		Negation	Interrogation
TASK	Manipulation		
	Translation		

In this design, there are two main independent variables (the dependent being proficiency) - we want to investigate whether there is any difference in IL among the following groups:

- (1) Translation Negation among the 5 Levels.
- (2) Translation Interrogation among the 5 Levels.



- (3) Manipulation Negation among the 5 Levels.
- (4) Manipulation Interrogation among the 5 Levels.

3-way ANOVA, the third variable is Level/Class, allows us to make reasonable conclusions about the learners' performance, and to talk about the following different effects:

- 1. the effect of Level/Class (Factor A);
- 2. the effect of Task (Factor B): Translation vs. Manipulation;
- 3. the effect of Structure (Factor C): Negation vs. Interrogation;
- 4. the effect of a combination between Factor A by B (the interaction of Task and Level/Class);
- 5. the effect of combination between Factor A by C (the interaction of Structure and Level/Class);
- 6. the effect of the 3 factors together (Task by Structure by Level).

Nie et al. (1975: 406) explain the positioning of sums of squares in Factorial Designs with unequal cells as follows:

---

ANOVA: Classic Experimental Model

Source of Variation

- 1. Sum of Squares (SS) due to A and B, additive model
    - (a) SS due to A, adjusted for B
    - (b) SS due to B, adjusted for A
  - 2. SS due to A X B interaction
  - 3. SS Residual
- 

Significance testing consists of the following:

- (a) Test the significance of interaction. Interaction variations are those attributable not to either of two influences acting alone, but to the joint effects of the two acting together.
- (b) If the interaction is not significant, test the significance of the additive model.
- (c) Test the significance of each main effect.

The three types of components (i.e. 1 to 3) are made orthogonal to one another by imposing a certain hierarchy. The interaction component is given by the residual components of the effects of A and B. The error component is likewise defined by the residual sums of squares (Nie et al., op. cit.: 405). The label marked 'Residual' is "the leftover or the within group sum of squares SSW. This is the amount of individual errors in the experiment or the amount of variation that we are not able to explain" (Hatch and Farhady 1982: 162).

The classic experimental approach was used because the main effects are assumed to have higher priority over interactional effects and because the two factors Task and Structure do not have a known causal order.

#### Advantages of Factorial Designs

- (1) One of the advantages of FD over conducting multiple one-way ANOVAs lies precisely in this capacity of FD to look at the interaction effect of the combination of variables. Within one-way ANOVA we could not see the interactions between the levels of the independent variables (Task, Structure and Level) in the design.
- (2) If F is significant, there is still no way of knowing whether this is due primarily or solely to Factor A or to Factor B or Factor C, or to all possible sources. On the other hand, if F is not significant, there is no way of knowing definitely that one of the factors or experimental variations is not actually producing real variations that were counteracted by the effect of the other factors; hence, there will be a confounding effect. Thus, we need a method which makes it possible to segregate the variations contributed by each experimental variable. Therefore, any significant differences will emerge in the F test, the researcher is, then, able to attribute differences to Factors A, B or C or to their interaction: A by B; A by C or A by B by C (Gilford and Fruchter 1978: 245).
- (3) The statistics produced by the interaction of the various factors Level (L) by Structure (S); Level by Task (T) or L

by S by T, could be used later to calculate significant differences in pair-wise comparisons (Scheffé-tests).

#### The Variance Ratio (F)

The percentages (Appendix 3.2.) and the means in Table 6.2., are useful only to display the spread of subjects over the different levels of proficiency. However, such results do not reveal anything about significant differences on the basis of which we can falsify the Ho 6.1.

In this part, we present the computation of F, which is a measure analysis test of significant differences of variations in large and small independent samples alike, on the basis of which the above Null Hypothesis can be accepted or rejected.

The variance ratio F indicates:

"whether or not two variances could probably have arisen by random sampling from the same population of observations or from two populations with the same variance" (Guilford and Fruchter 1978: 165).

The differences between Levels of FD is tested by forming their ratios:

$$F = \frac{S_1^2}{S_2^2} \quad \begin{array}{l} \text{(between group variance)} \\ \text{(within group variance)} \end{array}$$

(Hatch and Farhady 1982: 130)

where  $S_1^2$  and  $S_2^2$  are estimates of population variances being compared and  $S_1^2$  is greater than or equal to  $S_2^2$ . If the F value is 1 or less, it represents that the groups all belong to the same population.

The BMDP (Dixon et al. (eds.) 1983: 359) ANOVA (P2V) was used for the computation of F values because: (i) it operates on cells of unequal sizes (i.e. there are unequal cells in the task of Negation and Interrogation); and (ii) it provides for a repeated measure design which incorporates several observations on the same subjects.

It is worth noting here, that the above constitute the major types of analyses for testing hypotheses and significant differences. However, in some cases where there are only two comparisons to be made (e.g. the overall performance on the two tasks), T-tests have been used to test for significant differences.

#### ANOVA: Level/Class as Factor

In order to have an overall test of all factors under study (Level, Task and Structure) and how they interact with each other and whether the differences considered are significant, ANOVA was computed.

As has been mentioned earlier, in our three Levels of analysis, we have three main independent variables: Task, Structure and Level and one dependent variable: Proficiency.

The hypothesis to be tested here, is whether the students' performance on one Level/Class is similar to the other Level(s)/Class(es). Using the percentages of Negation and Interrogation on both tasks (Appendix 3.3.), we programmed ANOVA runs and computed sums of squares, mean squares and the variance ratios (F) as below.

Table 6.4.: Analysis of Variance

	SOURCE	SUM OF SQUARES	DEGREES OF FREEDOM	MEAN SQUARE	F	TAIL PROB.
	MEAN	384460.76381	1	384460.76381	38066.55	0.0000
	LEVL	77472.96502	4	19368.24125	833.59	0.0000
1	ERROR	1115.26027	48	23.23459		
	TASK	7317.99676	1	7317.99676	2474.03	0.0000
	TL	437.03714	4	109.25929	36.94	0.0000
2	ERROR	141.98020	48	2.95792		
	STRUCTUR	2662.12515	1	2662.12515	242.85	0.0000
	SL	2049.21359	4	512.30340	46.74	0.0000
3	ERROR	526.16920	48	10.96186		
	TS	1242.25801	1	1242.25801	322.47	0.0000
	TSL	243.72383	4	60.93096	15.82	0.0000
4	ERROR	184.91066	48	3.85231		

As stated before ANOVA is a single composite test, therefore, although (in this Section) our interest is merely in Time as a factor of variation, nonetheless the programme computes and produces the statistics of the other factors and their interaction simultaneously. However, we will restrict our results and discussion to the effect of Time.

### Results

In ANOVA Table (6.4.), the F variance ratio under the heading Level is highly significant ( $F = 833.59$ ), beyond the  $p.00001$  level of significance. That is, the chance of being randomly similar (i.e. occurring as a result of chance) is very rare. This falsifies the Null Hypothesis ( $H_0$  6.1.) defined at the beginning of this Section which posits that there are no significant differences in the transitional grammars in Levels 1 to 5. The evidence given above indicates development from Level 1 to 2, 2 to 3, 3 to 4 and so on. It also supports the view that there is progressive movement along the IL development continuum as a function of time. Thus, the Null Hypothesis is safely rejected, since the difference within the five groups is statistically significant.

One-way ANOVA was also computed through the use of SPSS sub-programme Breakdown. Firstly, in the analysis each learner was observed twice: (i) Acquisition scores (i.e. Total Negation + Total Interrogation) on Translation; (ii) Acquisition scores on Manipulation. The analysis shows a highly significant F value between the groups. ( $F = 1111.92$ ) with a probability value of 0.00001 for Manipulation. The F ratio for Translation is very significant too ( $F = 617.22$ ,  $p = 0.00001$ ). (Computer output is to be found in Appendix 3.4.).

Secondly, each subject was observed four times for:

- (i) Translation Negation;
- (ii) Manipulation Negation;
- (iii) Translation Interrogation and
- (iv) Manipulation Interrogation (see Appendix 3.5.).

The results emphasize the factorial designs ANOVA.

#### 6.2.2.2. Scheffé-Tests for Comparisons of Group Means

However, in order to determine the significance of Time/Level on the acquisition of the features investigated in both tasks, a kind of T-test was felt necessary to be computed. After all, F test reveals nothing more than overall variations. It does not, for example, tell the analyst where the actual differences are between the five Levels of proficiency of TL. For instance, it may be possible that Level 1 may not be significantly different from Level 2, or Levels 4 and 5 may not be as significantly different as the difference between Levels 1 and 5, a possibility which is obscured by the general statement of differences between groups obtained by F.

For more detailed analysis, we used the S-tests for post-hoc comparisons of the five group means. Scheffé-tests were chosen because:

- (i) Although T-tests can be used to pair off two sets at a time, pairing each one with every other one and testing the significance of differences, we must be aware of the fact that in applying ordinary T-tests to all pairs of means, some of them should be expected to reach significance at the prescribed level as the F test has told us. The question is whether the number of such 'significant' T statistics could have arisen by chance in a multiple-set situation. Special T-values must be used to fit this situation (Hatch and Farhady 1982).
- (ii) The combination of ANOVA and a Scheffé-test allows the researcher to discover whether the levels of an independent variable differ in how they influence performance on the dependent variable. Thus, if there is a difference among the levels, a post-hoc comparison allows us to see exactly where the difference(s) occur (Hatch and Farhady op. cit.: p. 146).
- (iii) S-tests use a single range value for all comparisons, which is appropriate for examining all possible linear combinations of group means (e.g. an interaction) not just pair-wise comparisons.

- (iv) They are more conservative (stricter) than other tests "there is less chance of being wrong in claiming significant differences in the comparisons" (Hatch and Farhady *ibid*: 144). If comparisons turn out to be significantly different "you can feel confident that they are" (Hatch and Farhady *op. cit.*).
- (v) Also, Scheffé-tests are "exact even for unequal group size" (Nei *et al.* 1975: 824).

Thus, in order to determine whether the differences in performance observed in our above analysis over Time/Levels differ significantly; (i.e. whether Time is a statistically significant factor in the acquisition process), S-method was used to find special T values  $T'_{crit}$  for a more detailed picture of significant differences.

To calculate  $T'_{crit}$  the following statistics from the ANOVA output (Table 6.4. above), have been used:

- (a) means of all the groups;
- (b) mean square error (MSE) of the interaction being examined;
- (c) degree of freedom (df) for the MSE of the interaction examined. (Details of the calculations for  $T'_{crit}$  is given in Appendix 3.6).

The formula below was used for the calculation of  $T'_{crit}$

$$T'_{crit} = \sqrt{2F_s \times NMSE}$$

(Noether 1971: 188-190)

Where N = the number of plots in each cell total

MSE\* = the mean square error

$F_s = F_{k-1, f}$

F is the table's value with k-1 df as numerator

f\* = the df for MSE

k = the label on the longest column

\* (from ANOVA table)

In our analysis, S-tests have made it possible to compare the five groups with each other for significant differences. S-tests



have also been used to see the position of group relation to each other. The results are displayed in Table 6.5. (The statistics input is taken from ANOVA output: Tables 6.1. and 6.4.).

Table 6.5. Scheffé-Test: Differences between Levels:  
(Acquisition scores for the two tasks combined)

	L1	L2	L3	L4	L5
Cell means	34.48	53.18	66.56	79.63	90.66
Cell Totals	1517.12	2339.90	2928.60	3503.70	3989.04
1517.12	(L1)0	** 822.8	** 141.1	** 1986.6	** 2471.90
2339.90		(L2) 0	** 588.7	** 1163.8	** 1649.10
2928.60			(L3) 0	** 575.1	** 1060.44
3503.70				(L4) 0	** 485.34
3989.04					(L5) 0

where L = Level

df = 48, N = 44, MSE = 23.24, k - 1 = 5

F = 2.41                      p = 0.05  
3.42                          p = 0.01

Fs = 12.05                    p = 0.05  
17.10                        p = 0.01

Calculated  $t'_{crit} = 156.6$  \*p > 0.05

Calculated  $t'_{crit} = 188.5$  \*\*p > 0.01

(1) All significant beyond the probability level of 0.01

(2) Total number of significant differences = 10

Graphically the development over time is displayed in Figure 6.4. (above).

#### Interpretation of the above results

In Table 6.5. columns are arranged such that the group with the lowest mean scores is at the extreme left (L1) and the group with the highest (L5) at the extreme right in an ascending order of performance. Rows (the oblique lines) are similarly arranged: the lowest scoring at the bottom converging to the right. Pairwise comparisons are made by looking at the rows and the

column; e.g. L1 (row) compared with L2 (column) shows a significant difference. However, if we compare L1 and L5 we find the difference is more highly significant. In the same way we can go from one row to the next and compare a particular group with each of the other groups at the column, till we reach the bottom. Overall we can count the number of groups which are significantly different (there are ten, i.e. all of them) to explain the significant F values in the ANOVA table.

Since for all the groups there are significant differences between means from Level 1 to Level 5, all beyond 0.01 probability level of significance, the performance at these five levels are significantly different. Thus, the Null Hypothesis stated before is unambiguously rejected. Our conclusion is that the scale of exposure to the TL is a significant factor in the acquisition of the TL features (the same results are reported by Okanlawon<sup>1</sup> 1984: 152 and other studies).

### 6.3. VARIABILITY ACCORDING TO TASKS

In Sections (2.2.2.5.2., 3.1. and 3.2.) we have discussed some of the methodological and theoretical issues involved in types of elicitation techniques and the kind of data that they yield. For instance, some tasks like the discrete point task yield only accurate/inaccurate type of data while easing the task of quantification. Other tasks like translation give a wider and truer perspective of the learner's idiosyncratic language. Some tasks focus on form, while others on function. Questions on synchronic variability (variability due to task differences) raised by LoCoco (1976), Tarone (1979, 1983) Bialystok (1981) and others, are still unresolved for the most part, yet they are essential for a better understanding of SLA and the nature of IL.

We argue, then (Section 5.3.) that by using different types of elicitation materials we can arrive at a more comprehensive picture of the learner's system. Also, task comparisons will help uncover more about our research tools following studies like

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1. This study is on ESL.

those previously mentioned.

In this Section, therefore, our main interest is to see if the two tasks distinction will surface in the students' performance in different types of tests for the two areas of syntax: Negation and Interrogation.

Variability is more likely related to situational constraints on the tasks and the degree of access to and control of linguistic information conditioned by the type of task. Task differences, therefore, can be made more transparent by breaking down tasks into a set of characteristics. This will also explain why one task seems to be easier than the other. Tasks' characterizations are given as follows:

<u>Translation</u>	<u>Manipulation</u>
	(Grammaticality Judgement + Error Correction)
1. Written	1. Written
2. Production of a full sentence	2. Recognition of grammaticality of a full sentence/ Correction/ Production of part/ full sentence
3. Stimuli: NL Negative/Interrogative sentences	3. Stimuli: TL positive declarative sentences to be transferred into Negative/Interrogative sentences
4. Focus on communication more than form	4. Focus on form more than communication. (It should be noted that Characteristic 4 is applicable in comparison with Translation, however, focus on form in this task is not like other discrete point tests e.g. multiple choice, or fill-in-the-blanks where the focus on form is stronger)
5. Spontaneous	5. Less spontaneous than Translation, but not very delayed

Having considered the set of features characterizing the tasks, we remind ourselves that one of the main hypotheses stated for this study (Section 5.1.), predicts shifts in regularities of rule application across tasks. The Null Hypothesis we want to test here is:-

H06.2 There is no significant difference in the performance scores of the learners in the five Levels in the 2 tasks for the Acquisition Scores (i.e. total Negation + total Interrogation).

6.3.1. Variability Across Elicitation Tasks in Acquisition Scores

6.3.1.1. Calculation of Percentages of Performance Scores on each Task for the 5 Levels

Distribution of learners from the 5 Levels according to percentages of performance scores at 20 intervals were calculated, on each task. Results are displayed below:

Table 6.6.A: Distribution of Learners' Percentages on Translation

Performance Level	L1	L2	L3	L4	L5
0 - 20	0	0	0	0	0
20 - 39	11	0	0	0	0
40 - 59	0	11	5	0	0
60 - 79	0	0	7	12	0
80 - 100	0	0	0	0	10
TOTAL	11	11	12	12	10 = 56

Table 6.6.B: Distribution of Learner's Percentages on Manipulation

Performance Level	L1	L2	L3	L4	L5
0 - 20	0	0	0	0	0
20 - 39	0	0	0	0	0
40 - 59	10	5	0	0	0
60 - 79	0	6	11	0	0
80 - 100	0	0	0	12	9*
TOTAL	10	11	11	12	9 = 53

\*It should be noted here that learners at Level 5 score better than those at Level 4 (scores range from 83-86 for Level 4 and from 94-98 for Level 5). Refer to Appendix 3.2. for results of each individual.

### Interpretation of the above Tables

Learners' performance on Negation and Interrogation combined as a single score shows variability across elicitation tasks. In Translation (Table 6.6.A) the lowest percentage is 21.57, an indication of a very poor performance by the subjects. In the second task (Table 6.6.B), the percentages for Level 1 starts from 40.29 (a Level the students reached at Level 2 on the first task). Thus, there is a great reduction from Task 2 to 1 (40.29 and 21.57 respectively). On the whole, better performances are found in Manipulation with the highest score (98.43) being on the highest Level (5). Improvements due to tasks differences can be located by comparing the performance of each level on both tasks; for example the highest Level (5) in the two tasks, the improvement is from (83.29 - 94.57) to (91.86 - 98.43) in Translation and Manipulation respectively.

#### 6.3.1.2. Calculation of Means of Performance Scores

Means of performance scores were calculated for each Level in the 2 tasks for the Acquisition Scores. Results were presented earlier in Table 6.2. and were graphically displayed in Figure 6.3.

### Summary Results

- (a) In the 5 Levels, there are better performances by learners in Task 2 than in task 1.
- (b) Comparisons between the percentages of learners at the 5 Levels show improvements due to time on both tasks.

#### 6.3.2. Variability Across Elicitation Tasks in Negation and Interrogation

In the previous analyses (6.3.1.1. and 6.3.1.2.) we have seen that there are significant differences between group means in the two tasks in Acquisition Scores. Our next analysis will be to look for significant differences between the tasks in the investigated structures, and in order to do so, we set up the following null hypotheses:

- H0 6.3. There is no significant difference between Translation and Manipulation Tasks in Total Negation.
- H0 6.4. There is no significant difference between the two tasks in Total Interrogation.

Other hypotheses related to particular interrogative particles and negative particles are to be discussed in(6.4.).

#### 6.3.2.1. Frequency Distribution Analysis

In order to determine the pattern of distribution of the learners, the performance scores of the subjects have been calculated and arranged at 10% intervals. These are presented in Tables 6.7.A and B (for Negation) and 6.7 C and D (for Interrogation). (Refer to App. 3.3. for results of each individual).

Table 6.7: Frequency Distribution of Learners' Percentages

#### A: Negation Translation

#### B: Negation Manipulation

Performance Level	L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
0 - 9	0	0	0	0	0	0	0	0	0	0
10 - 19	4	0	0	0	0	0	0	0	0	0
20 - 29	7	0	0	0	0	0	0	0	0	0
30 - 39	0	10	0	0	0	5	0	0	0	0
40 - 49	0	1	4	0	0	5	0	0	0	0
50 - 59	0	0	7	0	0	0	11	0	0	0
60 - 69	0	0	1	4	0	0	0	4	0	0
70 - 79	0	0	0	8	1	0	0	7	0	0
80 - 89	0	0	0	0	6	0	0	0	12	0
90 - 100	0	0	0	0	3	0	0	0	0	9
TOTAL	11	11	12	12	10	10	11	12	12	9

Table 6.7: Frequency Distribution of Learners' Percentages

C: Interrogation TranslationD : Interrogation Manipulation

Performance Level	L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
0 - 9	0	0	0	0	0	0	0	0	0	0
10 - 19	0	0	0	0	0	0	0	0	0	0
20 - 29	2	0	0	0	0	0	0	0	0	0
30 - 39	8	0	0	0	0	10	0	0	0	0
40 - 49	1	0	0	0	0	0	0	0	0	0
50 - 59	0	7	0	0	0	0	11	0	0	0
60 - 69	0	4	6	0	0	0	0	0	0	0
70 - 79	0	0	6	10	0	0	0	11	2	0
80 - 89	0	0	0	2	8	0	0	0	10	0
90 - 100	0	0	0	0	2	0	0	0	0	9
TOTAL	11	11	12	12	10	10	11	11	12	9

Results

- (a) A study of Tables 6.7A to D reveals that the learners are spread out across a learning continuum from the lowest to the highest points. We can, then, assume that they constitute a reasonable cross-section of language learners at different levels of proficiency in the TL.
- (b) There is also a general observation to make here, generally speaking, an increasing percentage of subjects' scores is found at higher performance levels as we move forwards from Level 1 which indicates development in the learners' knowledge of the structural areas under investigation over time. On both tasks, the majority of learners are bunched towards the lowest performance levels (L1); while in L5, they are bunched towards the higher performance levels.
- (c) At the highest level (L5) the improvement (due to task difference) is not high (6.53% and 13% on Interrogation and Negation respectively). A better example of improvement in the Manipulation task is shown by Levels 1, 2, 3 and 4 on Negation (Table 6.7.A and B), which shows dramatic increases (about 20%). This is also true for L1 on Interrogation (Table 6.7.C and D). Subjects of Levels 2, 3 and 4 show marked improvement on Interrogation Manipulation, with rises



from 52 to 61, 67 to 71, and from 75 to 79 respectively. To put it differently, the improvement percentage drops as we move towards higher levels (only 6.53% at L5 for Interrogation).

- (d) Apart from the slight discrepancy in L4 on one task and L5 on both tasks, the overall distribution shows that learners perform better in Interrogation than Negation. Thus, although there is variability according to tasks' difference (better performance is evident on Manipulation rather than Translation), the order of structure remains the same (i.e. Interrogation is more favoured than Negation).
- (e) It is quite apparent from Tables 6.7A to D that as far as the categorical use (or the assumed full acquisition of the variants) is concerned, there is a considerable difference between the two tasks. A possible explanation for the low performance in the Translation task is that the learners are helped in the other task through the presence of interrogative/negative particles. For example, the reason the subjects did not perform in the Translation task as well as they did in the Manipulation Task (on Negation) is due to the failure of some of them to identify correctly the negator/lan/ as 'will not' (Refer to 6.4.).

#### 6.3.2.2. Means of Performance scores in Negation and Interrogation

Means of performance scores for each group were computed, the results are given in Table (6.1.) above. The means of performance scores are graphically displayed in Figures 6.2. (above). The results of the analysis support the frequency distribution analysis (6.3.2.1.).

(Analyses of the variability across the elicitation tasks on each Negative/Interrogative particle are presented in Section 6.4.).

#### 6.3.3. Analysis of Variance: Task as Factor

The above analyses indicate variable performances according to the types of tasks. To find whether the task-type variation is significant or not ANOVA (Table 6.4.) was used again. The F value

for the factor Task is 2474.03 ( $p = 0.00001$ ) for overall performance (i.e. Total Negation + Total Interrogation).

ANOVA results show that there are significant differences in the performance scores by the learners as a function of task difference. This establishes beyond doubt that there are variable performances according to the type of tasks. Thus, the Null hypothesis stated earlier is rejected in favour of an alternative hypothesis that the tasks produce significantly different results in learners' performance in the 2 tasks for the overall performance.

#### 6.3.4. Scheffé-Tests of Significant Interaction: Task by Level

Although the previous analysis reveals that there is a significant F value for difference of task only, the F ratio for the interaction of Task and Level on overall gain scores is also highly significant (36.94)  $p > 0.00001$  (refer to ANOVA output: Table 6.4.).

This means that it is not just Task difference which is significant, but both factors: Level and Task together seem to influence learners' performance. To put it differently, this means that while one task did work better than the other, this may be due to the independent factor (i.e. Level). Since there is a significant interaction, it makes us suspicious of any claims made about the main effect of Task. We cannot make strong claims that the Manipulation task works better than the Translation task, most of the difference for tasks is attributable to the better performance of Level on the Manipulation task. Whenever we have a strong interaction effect we cannot consider the main effects (Task alone/Level alone) as important. The interaction effects overrides the main effect.

In order to determine whether the interaction of Task by Level is statistically significant at each level of proficiency, Scheffé-tests were made on the group cell means and other statistics in the ANOVA output (Tables 6.1. and 6.4.). The results are shown in the following Table 6.8.

Table 6.8: Scheffé-Test: Task by Level (TL) Interaction

	L1T	L1M	L2T	L2M	L3T	L3M	L4T	L4M	L5T	L5M
Cell Means	26.32	42.64	46.43	59.93	60.83	72.29	74.45	84.81	86.96	94.53
Cell Totals	579.04	938.08	1021.46	1318.46	1338.26	1590.38	1637.90	1865.82	1913.12	2079.66
579.4 (L1T) 0	**359.04	**442.42	**739.42	**759.22	**1011.34	**1058.86	**1286.78	**1334.08	**1500.62	
938.08 (L1M) 0	** 83.38	**380.38	**399.62	** 652.30	** 699.82	** 927.74	** 975.04	**1141.58		
1021.46 (L2T) 0	**292.00	**316.80	** 568.92	** 616.44	** 844.36	** 891.66	**1058.20			
1318.46 (L2M) 0	19.8	** 271.92	** 319.44	** 547.36	** 574.86	** 741.40	** 761.20			
1338.26 (L3T) 0	** 252.12	** 298.74	** 322.74	** 489.28	** 441.76					
1590.38 (L3M) 0	47.52	NS (L4T) 0	NS (L4T) 0	NS (L4T) 0	NS (L4T) 0					
1637.9 (L4T) 0	27.1	p = 0.01	27.1	p = 0.01						
1865.82 (L4M) 0	47.20	NS (L5T) 0	NS (L5T) 0	NS (L5T) 0						
1913.12 (L5T) 0	213.84	166.54								
2079.66 (L5M) 0										

300a

df = 48; n = 22; MSE = 2.96; k-1 = 10; F = 2.03 p = 0.05; Fs 20.3 = p = 0.05  
calculated  $t'_{crit} = 51.42$  \*p = 0.05

$t'_{crit} = 59.41$  \*\*p = 0.01

\*\* significant beyond p = 0.01  
total of significant differences = 42

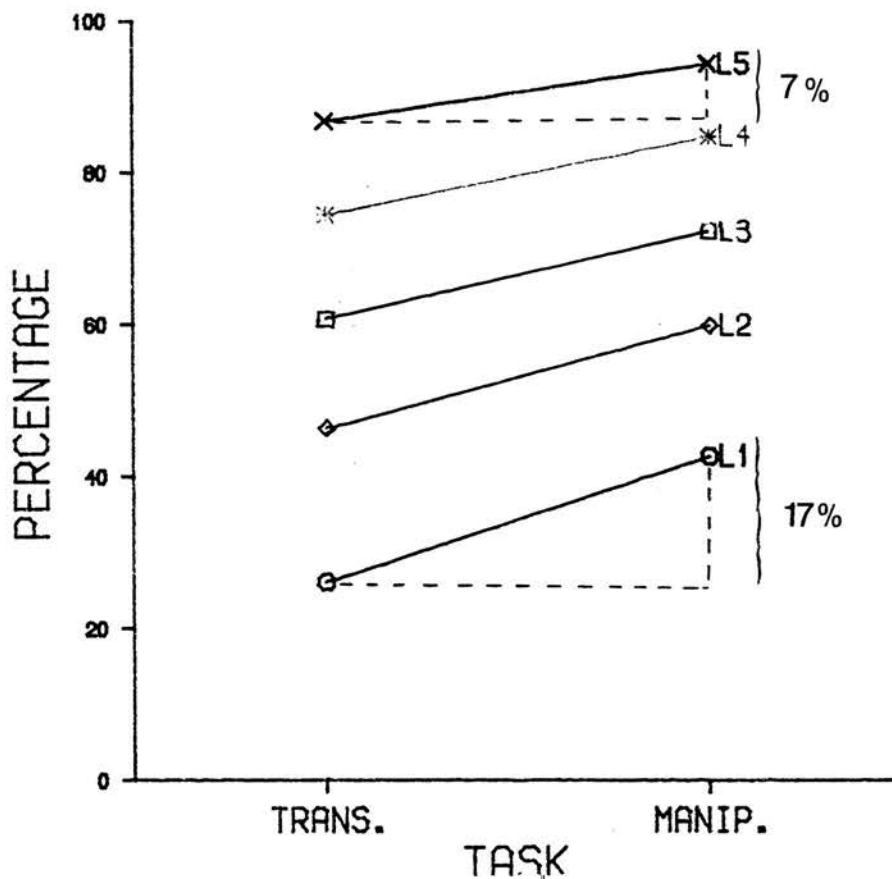
Where: T = Translation  
M = Manipulation  
L = Level  
NS = Not Significant

The Table (6.8.) shows an interaction between Task and Level. The matrix table also classifies how each interaction of Level and Task does or does not produce significant differences. For example, the interaction of Level 2 on Manipulation with Level 3 on Translation; Level 4 on Translation and Level 3 on Manipulation, and Level 5 on Translation and Level 4 on Manipulation, are not significantly different. Apart from those insignificant interactions, the interactions between the other groups are statistically significant.

It is neither, therefore, only a question of membership to the lowest class which singly decides significant differences nor the difference between the tasks, but the interaction of both factors together. In other words, there is no single criterion for rejecting the null hypotheses ( $H_0$  6.1 and  $H_0$  6.2), in interactional results.

According to Hatch and Farhady (1982: 159), the best way to interpret an interaction is to plot the means of the groups. The figure makes it easier for the analyst and the reader to understand what has happened between the levels of our factors (Task and Level). Thus, the interaction between the Task and Level is shown graphically (Figure 6.5.)

Figure 6.5. Level by Task Interaction



Although, the lines here seem to suggest that there is no interactional effect at all between Level and Task, a close examination justifies the significant F value of Task by Level interaction. The percentage of improvement on the Manipulation task decreases as we move towards the next level of proficiency. A better comparison of the increase of improvement is between L1 and L5 (the increase is 17% and 7% respectively). The figure then, demonstrates the complex interactions of Level by Task.

### 6.3.5. Correlation Analysis

#### 6.3.5.1. Introduction

Pearson correlation has been used to find out the strength of relationship between types of tasks in the areas under investigation. The Pearson product-moment correlation ( $r$ ) is especially appropriate for the above variable because ( $r$ ):

"is an index of the tendency for the scores of a group of examinees on one test to covary (that is, to differ from their respective mean in similar direction and magnitude), with the scores of the same group of examinees on another test" (Oller 1979: 54).

Mathematically then, ( $r$ ) is defined as the:

"ratio of covariation to square root of the product of the variation in X and the variation in Y, where X and Y symbolize the 2 variables" (Nie et al. 1975: 280).

The aim of correlation analysis is to determine the extent to which variation in one variable is linked to variation in the other (e.g. scores in Interrogation and Negation; scores in Translation and Manipulation). As such, correlations can also be used to assess the reliability and validity of tests (Allen and Davies 1977: 22). Again, correlations also have predictive values, because if ( $r$ ) approaches nearer to the perfect correlation of 1, the more valid test is a predictor of scores in test 2, or vice versa. A high correlation (0.95 - 1.00) depends on the relative position of each individual in both tests and the relative distances between individuals which should be comparable.

A good guide to interpret correlations have been given by

Connolly and Slukin (1957: 154).

0.90 - 1.00	= very high correlation, very strong relationship
0.70 - 0.90	= high correlation; marked relationship
0.40 - 0.70	= moderate correlation, substantial relationship
0.20 - 0.40	= low correlation, a definite relationship but a small one
0.20 and less	= slight correlation, relationship so small as to be negligible

(Cited by Allen and Davies 1977: 25).

For levels of significance, Fisher and Yates (1938: 63) give the following guidelines for a sample of 100:

p	r
0.1	.16
0.05	.19
0.02	.23
0.01	.25
0.001	.32

The following formula was used for computing the (r) value:

$$r = \frac{\sum_{i=1}^N x_i y_i - (\sum_{i=1}^N x_i)(\sum_{i=1}^N y_i)/N}{\left\{ \left[ \sum_{i=1}^N x_i^2 - (\sum_{i=1}^N x_i)^2/N \right] \left[ \sum_{i=1}^N y_i^2 - (\sum_{i=1}^N y_i)^2/N \right] \right\}^{1/2}}$$

(From Nie et al. 1975: 280)

Where  $X_i$  = ith observation of variable X

$Y_i$  = ith observation of variable Y

N = number of observation

$\bar{X} = \sum_{i=1}^N X_i / N$  = Mean of variable X

$\bar{Y} = \sum_{i=1}^N Y_i / N$  = Mean of variable Y

Finally, following Garrett (1960), attempts have been made to interpret correlations with reference to the conditions under which they were obtained, e.g. the nature of the variables, the significance of the co-efficient, the groups under investigation etc.

#### 6.3.5.2. Correlation Analysis: Performance on the Two Tasks

In the first two analyses in this Section (6.3.1. and 6.3.2.), we have looked at pattern of distribution of learners according to the tasks. Then, we have established significant differences between the 2 tasks (Section 6.3.3.), also we emphasized the fact that there are significant interactions between Level and Task (6.3.4.).

In this analysis, we will look at the inter-relationships between the Tasks to seek support to our findings in the previous analyses. For this purpose, we set up a Null hypothesis ( $H_0$  6.5.) which states that there is no significant correlation between the performance of the testees in Task I and Task II.

To test this Null Hypothesis, the SPSS subprogramme (Pearson Corr.) was used to compute Pearson Product-Moment correlations for pairs of variables. As previously mentioned the Pearson Correlation coefficient ( $r$ ) is used to measure the strength of relationship between two interval-level variables. In this case, the correlations below were computed.

#### A. Correlation Analysis: Learners' Overall Performance (the 2 structures combined)

In order to determine the extent of the relationship the tasks have with one another on the Acquisition Scores, (the structure distinction was ignored) ( $r$ ) values were computed. Table 6.9.A shows the results:

Table 6.9.A Pearson Correlation Coefficients: Acquisition Scores

	Translation	Manipulation
Translation	1.0000 (no. = 53)	0.9974 (no. = 53)
Manipulation	0.9974 (no. = 53)	1.0000 (no. = 53)

The above correlation matrix gives the ( $r$ ) values based on overall subjects' performance (Structure difference as well as



Level difference were ignored).

B. Correlation Analysis: Learners' Performance  
(the 2 structures are separated)

To evaluate the relative change in the scores of the learners in both structure on the two tasks, scores of Total Negation and scores of Total Interrogation (Appendix 3.3.) were used as data for computing Pearson's  $r_s$ . Table 6.9B displays the results:

Table 6.9.B: Pearson Correlation Coefficients:  
Negation and Interrogation

	TN	TI	MN	MI
TN	1.0000 ( 56) P=*****	0.9410 ( 56) P=0.000	0.7406 ( 56) P=0.000	0.6406 ( 56) P=0.000
TI	0.9410 ( 56) P=0.000	1.0000 ( 56) P=*****	0.7224 ( 56) P=0.000	0.6611 ( 56) P=0.000
MN	0.7406 ( 56) P=0.000	0.7224 ( 56) P=0.000	1.0000 ( 56) P=*****	0.9752 ( 56) P=0.000
MI	0.6406 ( 56) P=0.000	0.6611 ( 56) P=0.000	0.9752 ( 56) P=0.000	1.0000 ( 56) P=*****

Where T = Translation; M = Manipulation;  
I = Interrogation; N = Negation.

Interpretation of the above Tables

The resulting values of ( $r$ ) on both Tables (6.9. A and B), show highly significant inter-task correlations ( ranging from 0.94 to 0.99 with probability values beyond 0.0001). The high correlation (in Table 6.9.A) is an indication of a marked relationship between the 2 elicitation tasks. Hence, the tasks

could be said to have measured the learners' IL in a consistent manner.

These significant (r) values confirm the Scheffé-tests' results, which indicate that the 5 Levels of proficiency are significantly different. In other words, the range of exposure to TL in our data (from beginners to advanced), influenced the (r) values.

#### 6.4. VARIABILITY ACCORDING TO STRUCTURE

##### 6.4.1. Performance on Negation and Interrogation

One of the hypotheses of this study (Section 5.1.), is to examine the learners' performance on the two main structural areas under investigation (i.e. Negation and Interrogation). Since this hypothesis is testable its Null Hypothesis is stated as:-

H0 6.6.        There is no significant difference in the performance scores on the two syntactic areas (i.e. performance scores on total Negation are similar to performance scores on total Interrogation).

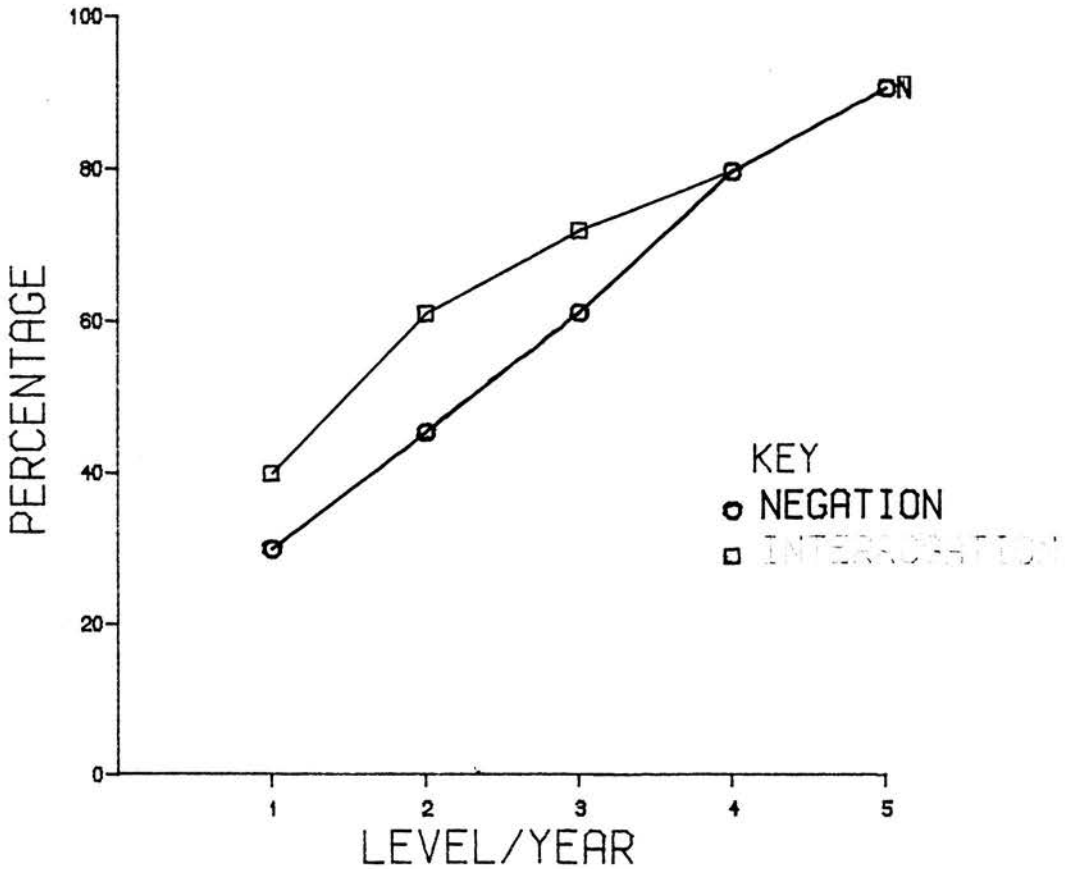
Table 6.1. above gives the overall differences in the 5 Level Groups. Graphically the results are displayed in Figure 6.2. (above).

##### 6.4.1.1. Means of Performance Scores in Negation and Interrogation (the two tasks combined)

In order to investigate the difference of learners' performance on Negation and Interrogation, the task distinction was ignored. The means are displayed in Table 6.10 below and graphically shown in Figure 6.6. (These results are obtained from ANOVA output Table 6.1.: the total Interrogation on both tasks are added together and then divided by two. The same procedure has been done for Negation data).

Table 6.10: Means of Negation and Interrogation (Tasks combined)

Level	Negation	Interrogation
L1	29.99	39.98
L2	45.36	61.00
L3	61.10	72.02
L4	79.62	79.65
L5	90.61	90.70

Figure 6.6: Means of Negation and Interrogation

As previously mentioned (Section 6.1.) that the performance on Interrogation data was better than that on Negation in all levels, with the exception of Level 4 and Level 5 (the difference however is very minor when the two tasks are combined. Compare Table 6.10 with Table 6.1. above). See Chapter 7 for discussion.

#### 6.4.1.2. Analysis of Variance: Structure as Factor

The above analysis reveals that variability does exist due to different structures. To investigate whether the structure variation is statistically significant or not, ANOVA Table (6.4.) above was used. The F variance ratio under the heading 'Structure' is highly significant (242.85), with a probability value beyond 0.00001 for overall performance. Hence, there are significant differences in the performance scores by the learners as a function of structure difference. The Null Hypothesis ( $H_0$  6.6) is, then, rejected in favour of its working hypothesis, which

states that the type of structure (Negation or Interrogation) does influence performance though the tasks may be the same. Therefore, even when the tasks are treated separately, Interrogation is more favoured than Negation (refer to Table 6.1.).

#### 6.4.1.3. Scheffé-test of Significant Interaction: Structure by Level

Looking at ANOVA Table (6.4.) we will notice that the F value for the interaction of Structure by Level (on overall gain scores), is highly significant ( $F = 46.74$ ,  $p > 0.00001$ ). This is an indication that it is not just Structure difference which causes variability, but both factors (i.e. Level and Structure) together appear to influence learners' performance.

Since the interaction effect overrides the main effect (here Structure), we cannot make strong claims that Structure alone affected the subjects' performance. This significant interactional effect of the two factors makes it necessary to compare the group means to find out which group is significantly different from which other group(s). As in Sections (6.2.2.2. and 6.3.4.), we chose the S-method of comparisons of group means: calculating  $t'_{crit}$  values using the ANOVA output (i.e. group cell means, degree of freedom associated with residual mean square and the mean square). Results are given in Table 6.11.

Table 6.11.: Scheffé Test: Structure by Level (SL) Interaction

	L1N	L1I	L2N	L2I	L3N	L3I	L4N	L4I	L5N	L5I
Cell Means	29.99	39.98	45.36	61.00	61.10	72.02	79.62	79.65	90.61	90.70
Cell Totals	659.78	857.56	997.92	1340.00	1344.20	1584.44	1751.64	1752.30	1993.42	1995.40
659.78 (L1N) 0		**197.78	**338.14	**680.22	**684.42	** 924.66	**1091.86	**1092.52	**1333.64	**1335.62
857.56	(L1I) 0		**140.36	**482.44	**486.64	** 726.88	** 894.08	** 894.74	**1135.86	**1137.84
997.92		(L2N) 0		**342.08	**346.28	** 586.52	** 753.72	** 754.38	** 997.48	** 995.50
1340.00			(L2I) 0		4.2	** 244.44	** 411.64	** 412.30	** 653.42	** 655.40
1344.20					NS	(L3N) 0	** 407.24	** 407.90	** 649.02	** 651.00
1584.44						(L3I) 0	** 167.20	** 167.86	** 408.98	** 410.96
1751.64							(L4I) 0	0.66	** 241.78	** 243.76
1752.32								NS	(L4N) 0	** 243.10
1993.42									(L5N) 0	1.95
1995.40										NS
										(L5I) 0

df = 48; n = 22; MSe =10.96; k-1 = 10; F = 2.03 p = 0.05; Fs 20.3 = p = 0.05  
2.71 p = 0.01 27.1 p = 0.01

Where L = Level, N = Negation, I = Interrogation

Calculated  $t'_{crit} = 6.37 \times 15.53 = 98.91$  \*p = 0.05

Calculated  $t'_{crit} = 7.36 \times 15.53 = 114.30$  \*\*p = 0.01

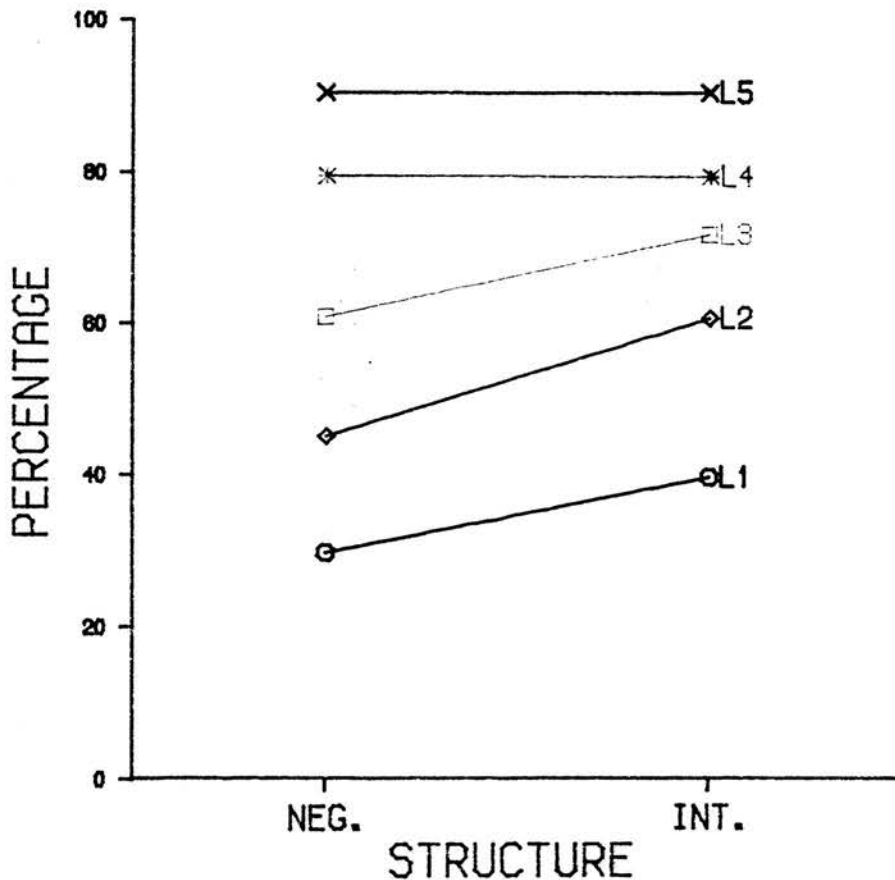
NS = Not Significant

Total of Significant differences = 42

The Table (6.11.) shows a significant interaction ( $t'_{crit} = 114.30$   $p > 0.01$ ), between Structure and Level. Only three interactions (L2I with L3N; L4I with L4N and L5N with L5I) were not significantly different. Therefore, it is not merely the difference between Structure (i.e. the difference between Interrogation vs. Negation) that is important, but the interaction of this factor with the independent variable (Level) that produces the differences in learners' overall performance.

In order to more easily understand what has happened between our two factors (Level and Structure), the means of the groups are graphically plotted in Figure 6.7.

Figure 6.7: Level by Structure Interaction



It is quite apparent from Figure (6.7.) that there are interactions between Structure and Level. The decreases of improvement on Negation as opposed to Interrogation vary according to Level of proficiency, e.g. there is no significant difference between the learners' performance on Negation and Interrogation at Levels 4 and 5. In fact the mean scores for the two structural areas are very close to or over 80%, the level at which an individual level, acquisition, is generally considered to be slowing down.

Although, on the whole, the decrease percentage seems to be smaller as we move towards higher levels (compare L1 with L4 and L5), the difference between learners' performance on Interrogation and Negation, appear to increase at L2 in comparison with L1. However, if we forget about L1 and compare the 4 Levels (2-5), the suggestion above (performance on Interrogation was better than Negation at lower levels of proficiency) is maintained.

#### 6.4.2. Negation: Variability According to Negative Particle

##### 6.4.2.1. Calculations of Means

What we did next was to ascertain whether variation actually exists in the learners' performance in terms of the four negative particles postulated. Thus a preliminary analysis of group performance was made in order to measure group trends. At the beginning, the mean score for each group level in each of the four negative particles (i.e. /la:/, /lam/, /lan/ and /laysa/) were calculated, refer to Table 6.12.

Table 6.12.: Means of the Four Negative Particles on Each Task

TASK	TRANSLATION				MANIPULATION			
Neg P								
Level	la:	lam	lan	laysa	la:	lam	lan	laysa
1	32.00	22.00	11.30	16.30	47.60	35.20	35.70	41.20
2	52.55	47.46	19.55	24.64	65.18	61.81	44.64	51.91
3	68.00	64.09	37.73	39.91	77.27	76.27	65.45	64.18
4	79.42	77.58	65.00	65.50	88.33	87.58	88.50	86.58
5	88.89	87.56	85.33	83.78	95.89	94.78	95.22	93.78

(From ANOVA output: Table 6.13. below)



Figures (6.8A and B.) also draw the mean scores of each group level for each negative particle on the two tasks.

Figure 6.8.A: Translation Task

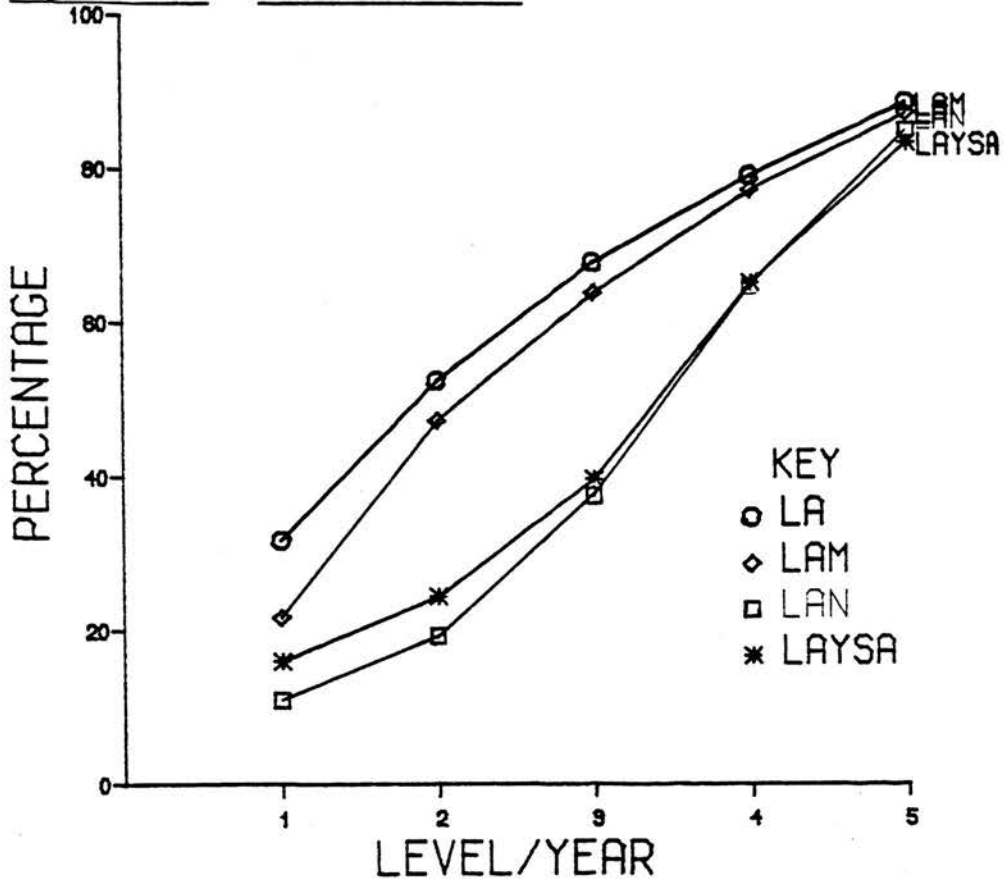
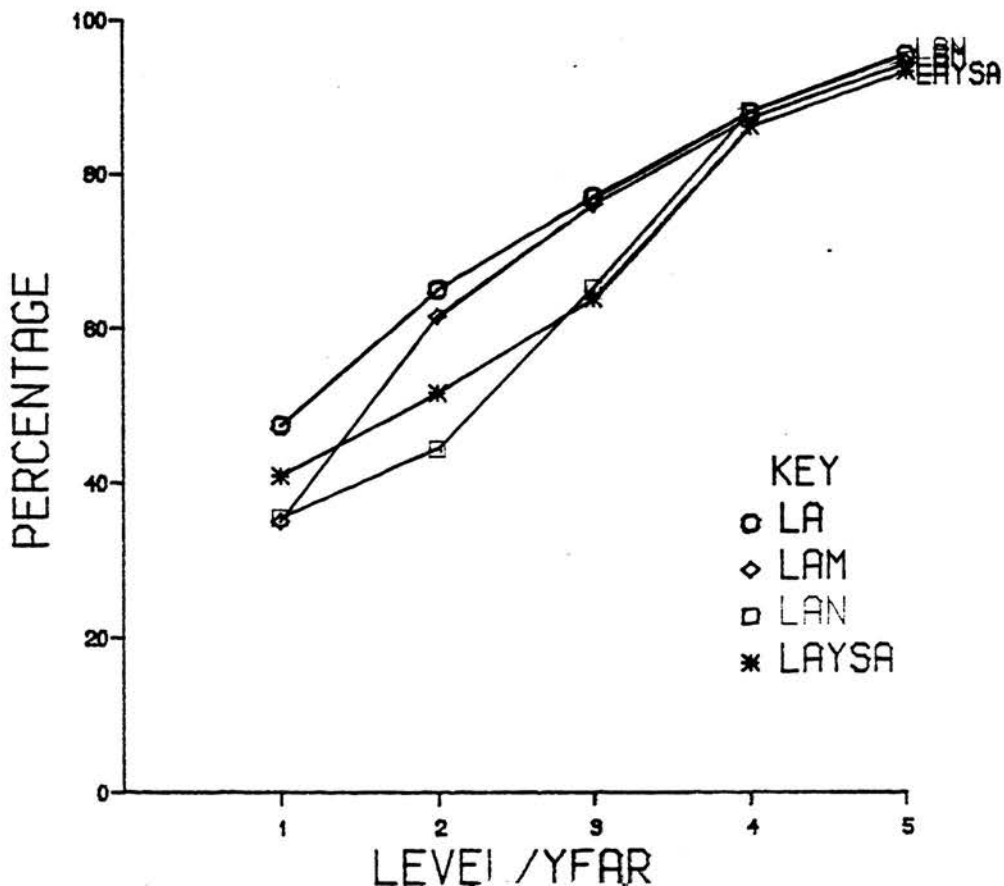


Figure 6.8.B.: Manipulation Task



For the purpose of this cross-sectional study, the analysis shows that at the group level of proficiency, there is a considerable variable realization of negative particles. For all groups the negative particles /la:/ and /lam/ are the most favoured, followed by /lan/ and /laysa/, depending on learners' level of proficiency; i.e. /laysa/ seems to be more favoured than /lan/ for learners Levels 1 and 2. The issue is further investigated by Implicational Analysis (Section 6.4.2.5.1.1.).

A study of Table 6.12. and Figures 6.8. A and B reveals a slightly different pattern on Manipulation Task. Hence, there is no consistent pattern on the two tasks. In other words, there is variability due to tasks difference (Section 2.2.2.5.2.). Caution, however, should be taken when interpreting these results. The issue is further discussed in Sections (6.4.2.5.1.1. and 7.2.).

#### 6.4.2.2. Analysis of Variance: Negative Particles as Factor

It has been established (Section 6.2. and 6.3.) that Time and Task factors are sources of variation in the total negation and total interrogation. In this Section, we will test whether the same applies for the syntax of Negation, based on quantified data. There is an indication that differences exist between the learners according to the negative particles involved (refer to Section 6.4.1.1.).

In order to find out if significant differences exist due to the negative particles, the following hypotheses have to be tested:

H<sub>0</sub> 6.7. The four categories of negation are different from each other; i.e. linguistic categories are sources of variation.

H<sub>0</sub> 6.8. There is no order of acquisition of negation system in Arabic for learners.

ANOVA was made for the data on Negation (4 particles), based on the two tasks. The results are given in the ANOVA summary Table (6.13).

Table 6.13: ANOVA: Cell Means for Different Negative Particles

	G	R	S	A	B	C	D	E	MARGINAL
B1C1	1	1	1	47.60000	65.18182	77.27273	88.33333	95.88889	74.83019
B1C2	1	2	2	35.20000	61.81818	76.27273	87.58333	94.77778	71.22642
B1C3	1	3	3	35.70000	44.63636	65.45455	88.50000	95.22222	65.79245
B1C4	1	4	4	41.20000	51.90909	64.18182	86.58333	93.77778	67.39623
B2C1	2	1	1	32.00000	52.54545	68.00000	79.41667	88.88889	64.13208
B2C2	2	2	2	22.00000	47.45455	64.09091	77.58333	87.55556	59.73585
B2C3	2	3	3	11.30000	19.54545	37.72727	65.00000	85.33333	43.22642
B2C4	2	4	4	16.30000	24.63636	39.90909	65.50000	83.77778	45.52830
MARGINAL				30.16250	45.96591	61.61364	79.81250	90.65278	61.48349
COUNT				10	11	11	12	9	53

Where B1 = Manipulation, B2 = Translation  
 C1 = /la:/, C2 = /lam/, C3 = /lan/, C4 = /laysa/  
 G = Level, R = Task, S = Particle

The above Table shows the following results:-

- 1) Under the heading 'Marginal' (horizontal line) in which the two tasks and the Structure (i.e. various negative particles) are combined, development over time is apparent in Negation data. There is an increasing improvement from each level to the next (the average improvement is 15%). This implies learners' increasing complexity of the grammatical IL systems, so that they use correctly the items involved when exposed to more TL data (more here means length of study).
- 2) The Translation task is, again, more difficult than the Manipulation task. This, as stated earlier, indicates that the type of task is an important factor in variation.
- 3) Using the cell means (Table 6.13 above) as a guide, it appears that the order of negative particles from the most to the least favoured is uniform in the two tasks. The order of acquisition is as follows: (la: , lam) → (lan , laysa). The differences between /la:/ and /lam/; and between /lan/ and /laysa/ seem to be insignificant (Section 6.4.2.4.1.). This issue is further investigated through the implicational analysis technique: Section 6.4.2.5.

#### The Variance Ratio (F)

On the basis of the F values below (Table 6.14), it has been

established that there are significant differences in learners' performance according to the negative particles involved in the two tasks. This is because all the F ratios are significant beyond the  $p$  0.00001 level of significance.

Table 6.14: ANOVA: F Values of Variability According to Negative Particle

PAGE 4 HMDF2V HAIFA ANOVA NEG

ANALYSIS OF VARIANCE FOR 1-ST DEPENDENT VARIABLE = B1C1							
	B1C2	B1C3	B1C4	B2C1	B2C2	B2C3	B2C4
SOURCE	SUM OF SQUARES		DEGREES OF FREEDOM		MEAN SQUARE		TAIL PROB.
MEAN	1595619.70822		1		1595619.70822		0.0000
G	193184.29113		4		48296.07278		0.0000
1 ERROR	4197.21831		48		87.44205		
R	28327.72570		1		28327.72570		0.0000
RG	1655.79890		4		413.94973		0.0000
2 ERROR	1016.25770		48		21.17204		
S	15351.80943		3		5117.26981		0.0000
SS	7166.80636		12		597.23386		0.0000
3 ERROR	4306.94836		144		29.90936		
RS	3058.31052		3		1019.43684		0.0000
RSS	537.48511		12		44.79043		0.0005
4 ERROR	2054.21301		144		14.26537		

B1 = Manipulation, B2 = Translation  
 C1 = /la:/, C2 = /lam/, C3 = /lan/, C4 = /laysa/  
 G=Level of Proficiency,  
 R = Task,  
 S = Negative Particle/variant

#### 6.4.2.3. T-Test: Differences between Learners' Performance on the Two Tasks

It has been shown from the previous analysis (6.4.2.2.) that learners' performance vary according to Tasks in Negation data. One of our hypotheses is that variability depends on the set of data (here defined as Tasks).

Since there are only two comparisons involved, the inter-task relationship was further investigated using the SPSS subprogramme T-test for paired/matched samples. This is mainly to determine whether the differences between means of the four negative particle types on the two tasks were statistically significant.

Matched t-test is used because it is applicable to our sample since, here, we want to compare learners' performance on the two different tasks, (i.e. each learner has two scores, and we want to determine whether the difference between the two mean scores for the whole group, is significant). The following formula is used to compute the T-values:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{\sum X_1^2 + \sum X_2^2}{N_1 + N_2 - 2}\right) \left(\frac{N_1 + N_2}{N_1 N_2}\right)}}$$

Where  $\bar{X}_1$  and  $\bar{X}_2$  = mean of the two samples

$\sum X_1^2$  and  $\sum X_2^2$  = sum of squares in the two samples

$N_1$  and  $N_2$  = number of cases in the two samples

(From Guilford and Fruchter 1978: 157)

### Results

Table 6.15 below gives the comparisons between learners' performance in Negation data on both tasks.

Table 6.15: Correlated t-Values for Mean Scores in the 4 Negative Particles

T-TESTS ON NEGATIVE PARTICLES

31/01/86 PAGE 2

FILE NEGATION (CREATION DATE = 11/12/85)  
SUBFILE MANI TRANS

---

T - T E S T

---

GROUP 1 = FIRST GROUP 2 = NEXT		56 CASES 56 CASES											
VARIABLE		NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	* POOLED VARIANCE ESTIMATE *			* SEPARATE VARIANCE ESTIMATE *		
								T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
PCTLAN													
GROUP 1		56	63.2835	25.410	3.396								
GROUP 2		53	44.6092	27.942	3.838	1.21	0.488	3.65	107	0.000	3.64	104.65	0.000
PCTLAN													
GROUP 1		56	70.0670	21.527	2.877								
GROUP 2		53	60.3538	23.671	3.251	1.21	0.488	2.24	107	0.027	2.24	104.65	0.027
PCTLAT													
GROUP 1		56	74.0546	17.142	2.291								
GROUP 2		53	64.4617	21.200	2.912	1.53	0.122	2.68	107	0.011	2.59	100.05	0.011
PCTLAYS													
GROUP 1		56	65.4832	21.270	2.842								
GROUP 2		53	46.1931	25.940	3.563	1.49	0.148	4.26	107	0.000	4.23	100.64	0.000

T-tests between the Translation task and the Manipulation task in Negation data show significant differences between the means in Negation data. For /lan/ and /laysa/ the t-values are highly significant (3.65 and 4.26 respectively), beyond the probability levels of significance of 0.0001. The negative particle /la:/ is also significant at 0.01 of two tail probability level of significance, /lam/ is significant too. For the negation data, then, the two tasks are statistically different from each other. This supports the results obtained earlier (Section 6.3.).

#### 6.4.2.4. Scheffé-Tests

##### 6.4.2.4.1. Comparisons of Means: Negative Particle as Factor

From ANOVA output (Table 6.14.), we concluded that the variable negation particles differentiate learners' performance very significantly ( $F = 552.32$ ,  $p = 0.00001$ ). However, a Scheffé-test was calculated in order to determine whether significant differences exist between each of the particles. It could be, for example, that only one of the particles is significantly different from the others, it is also possible that each particle differs from the others, possibilities that cannot be revealed by the overall variation obtained by the F ratio.

In this analysis, the Task's difference as well as the Level's difference were ignored. Thus, the cell means under the heading 'Marginal' (vertical line) were used. Since the Task's difference was not important, B1 and B2 (Table 6.13.) for each negative particle were added and then divided by 2 (e.g.  $B1C1 + B2C1 \div 2 =$  cell mean). Four means, therefore, were compared using other statistics from Table 6.14. (i.e. MSE, df, F value etc.). The results of the Scheffé-test are given in Table 6.15. below.

Table 6.15: Scheffé-Test: Negative Particle as Factor

	C3	C4	C2	C1
Cell Means	54.51	56.46	65.48	69.48
Total Means	5778.06	5984.76	6940.88	7364.88
5778.06	0	206.7 NS	**1162.82	**1586.82
5984.76		0	**956.12	**1380.00
6940.88			0	424.00 NS
7364.88				0

Where C1=/la:/; C2=/lam/; C3=/lan/; C4= /laysa/;  
 df= 48; MSE=87.44; k-1=4; no.= 106  
 F= 2.56, p = 0.05; F=3.74; p= 0.01  
 Fs=10.24, p = 0.05; Fs =14.96; p = 0.01

Calculated  $t'_{crit} = 436.12$ , \*p = 0.05

Calculated  $t'_{crit} = 744.71$ , \*\*p = 0.01

NS = not significant

### Results

It is apparent (Table 6.15) that:

- Four means are significantly different beyond the probability level of 0.01;
- Two means, however, are not significantly different from each other: C4 and C3 (i.e. the Arabic negative particle /lan/ is not significantly different from /laysa/). Also, learners' performance on /la:/ is not statistically different from that on /lam/. (This is supported by the implicational analysis (Section 6.4.2.5.1.2.) on the Manipulation Task in which each two particles appeared to be acquired together). Our conclusion, then, is that learners' performance vary according to the negative particle in question.

#### 6.4.2.4.2. Test for Significant Interaction: Negative Particle by Task

F value for interaction of Task and Negative Particle is highly significant (0.00001), therefore, we calculated Scheffé-test to test for significant interaction, between the two variables.



Again, the statistics of ANOVA output (Tables 6.13 and 6.14), were used in the calculation. Table 6.16. shows the results of the analysis.

Table 6.16: Scheffé-Test for Significant Interaction: Negative Particle by Task

	B2C3	B2C4	B2C2	B2C1	B1C3	B1C4	B1C2	B1C1
Cell Means	43.23	43.53	59.74	64.13	65.80	67.40	71.23	74.83
Cell Totals	2291.19	2307.09	3166.22	2298.89	3487.40	3572.20	3775.19	3965.99
2291.19	0	15.90 NS	**875.03	**1107.70	**1196.21	**1281.01	**1484.00	**1674.80
2307.09	0	0	**859.13	**1091.80	**1180.31	**1265.11	**1468.10	**1658.90
3166.22		0	0	*832.67	**232.67	**3166.22	**405.98	**799.77
3398.89				0	88.15 NS	*173.31	**376.30	**567.10
3487.40					0	84.80 NS	**287.79	**478.59
3572.20						0	**202.99	**393.79
2775.19							0	**190.80
3965.99								0

Where B1 = Manipulation, B2 = Translation, C1 = /la:/, C2 = /lam/, C3 = /lan/, C4 = /laysa/

df = 144 (app. 150); MSE = 14.27, no. = 53, k - 1 = 8, F = 200, p = 0.05

F = 2.62. P = 0.01; Fs = 16. p = 0.05, Fs = 20.96. p = 0.01, NS = not significant

Calculated  $t'_{crit}$  = 155.66, \*p = 0.05

Calculated  $t'_{crit}$  = 178.05 \*\*p = 0.01

### Results

All the values of the interaction between negative particles and task are significant beyond the probability level of 0.01, except three: (a) B2C3 with B2C4 (i.e. /lan/ on Translation with /laysa/ on the same task); (b) B1C4 with B1C3 (/lan/ on Manipulation with /la:/ on Translation) and (c) B1C4 with B1C3 (i.e. /laysa/ on Manipulation with /lan/ on the same task). In a way this supports the findings of the previous analysis (Section 6.4.2.4.1.). since here also, the learners' performance on /lan/ and /laysa/ are not statistically different.

#### 6.4.2.4.3. Test for Significant Interaction: Negative Particle by Level

To evaluate whether there are significant interactions at each level of proficiency with each negative particle, we calculated Scheffé-test using the relevant statistics from Tables 6.13 and 6.14. The Task difference was ignored in this analysis (i.e. B1C1 was added to B2C1 and divided by 2, this was done for all the particles at each level), thus we were to compare 20 cell means. The results are displayed in the following Table (6.17).

### Results

Looking at table (6.17) it will be noticed that, the majority of the values of interaction between Negative Particle and Level are highly significant ( $p > 0.01$ ). However, there are 29 (out of about 162) values of interaction which are not significantly different.

Since the table is complicated (20 means of interaction are involved), an easier way of interpreting the table is through comparisons of the cell means. Judging from the cell means, the following is apparent:

- (1) There were no significant differences between C3, C2 and C4 at Level 1. Thus, learners' performance on /lan/, /laysa/, and /lam/ at the first level was not significantly different. At the same level of proficiency, however the

Table 6.17: Scheffé-test for Significant Interaction:Negative Particle by Level

	C3L1	C2L1	C4L1	C3L2	C4L2	C1L1	C3L3	C4L3	C2L2	C1L2	C2L3	C1L3	C4L4	C3L4	C2L4	C1L4	C4L5	C3L5	C2L5	C1L5
Cell Means	23.50	28.60	28.75	32.09	38.28	39.80	51.59	52.05	54.63	58.87	70.18	72.64	76.04	76.75	82.58	83.88	88.78	90.28	91.17	92.39
Cell Total	517.00	629.20	632.50	705.98	842.16	875.60	1134.98	1145.11	1201.86	1255.14	1543.96	1598.08	1672.88	1688.50	1816.76	1845.36	1953.16	1986.16	2005.74	2032.58
C3L1 517	0	112.20	115.50	188.98	325.16	368.60	617.98	628.10	694.86	778.14	1036.96	1081.08	1156.88	1171.50	1299.76	1328.36	1436.16	1469.16	1488.74	1515.58
C2L1 629.20	0	0	3.30	76.78	212.96	246.40	505.78	515.90	572.66	665.94	914.76	968.88	1043.68	1059.30	1187.56	1216.16	1323.96	1356.96	1376.54	1403.38
C4L1 632.50	0	0	0	73.48	209.66	243.10	502.48	512.60	569.36	662.64	911.46	965.58	1040.38	1056.00	1184.26	1212.86	1320.66	1353.66	1373.24	1400.08
C3L2 705.98	0	0	0	0	136.18	169.62	429.00	439.12	495.88	589.16	837.98	882.10	966.90	982.52	1110.78	1139.38	1247.18	1280.18	1299.76	1326.60
C4L2 842.16	0	0	0	0	0	33.44	292.82	302.94	359.70	452.98	701.80	755.92	830.72	846.34	974.60	1003.20	1111.00	1144.00	1163.58	1190.42
C1L1 875.60	0	0	0	0	0	0	259.38	269.50	336.26	419.54	668.36	722.48	797.28	812.90	941.16	969.76	1077.56	1110.56	1130.14	1156.98
C3L3 1134.98	0	0	0	0	0	0	0	10.12	66.88	160.16	408.98	463.10	537.90	553.52	681.78	710.38	818.18	851.18	881.76	897.60
C4L3 1145.10	0	0	0	0	0	0	0	0	56.76	150.04	398.86	452.98	527.78	543.40	671.66	700.26	808.06	841.06	860.64	887.48
C2L2 1201.86	0	0	0	0	0	0	0	0	0	93.28	342.10	396.22	471.02	486.54	614.90	643.50	751.30	784.30	803.88	830.72
C1L2 1236.40	0	0	0	0	0	0	0	0	0	NS	248.82	302.94	377.74	393.36	521.62	550.22	658.02	691.02	710.60	737.44
C2L3 1543.96	0	0	0	0	0	0	0	0	0	0	NS	0	128.92	144.54	272.80	301.40	409.20	442.20	461.78	488.62
C1L3 1598.08	0	0	0	0	0	0	0	0	0	0	0	0	NS	NS	0	0	409.20	442.20	461.78	488.62
C4L4 1672.88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	355.08	388.08	407.66	434.50
C3L4 1688.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280.28	313.28	332.86	359.70
C2L4 1816.76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264.66	297.60	317.24	344.08
C1L4 1845.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	136.40	169.40	188.98	215.82
C4L5 1953.16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NS	NS	160.38	187.22
C3L5 1996.16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NS	NS	NS	NS
C2L5 2005.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NS	NS	NS	NS
C1L5 2032.58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NS	NS	NS	NS

Where : L = Level; C1 = /La:/; C2 = /Lanv/; C3 = /Lanv/; C4 = /Laysa/;

df = 144 (approx. 150); MSE = 14.27; No = 22; k - 1 = 20; F = 1.64; P = 0.05;  
 F = 2.00; P = 0.01; Fs = 32.8; P = 0.05; Fg = 40; P = 0.01

Calculated  $t'_{crit} = 143.52$  P = 0.05 $t'_{crit} = 158.00$  P = 0.01

NS = Not Significant

Note: Unless stated, all significant beyond P 0.01

performance on /la:/ was statistically different from the other three negative particles. This is mainly because learners' performance on /la:/ was better than the other 3 at Level 1.

- (2) At Levels 2 and 3, no significant difference was found between C1 and C2 (i.e. /la:/ and /lan/). Comparisons of means values of C3 and C4 also revealed that differences between these two particles (i.e. /lan/ and /laysa/) were non-significant. Thus, at these levels of proficiency, learners treated /la:/ as /lam/, and /lan/ as /laysa/.
- (3) No significant differences were found between the learners' performance on the four negative particles at Levels 4 and 5. It seems, then, that the level of proficiency does affect learners performance in supplying the required structure (here the correct negative particle), especially at pre-intermediate and intermediate levels. However, the interaction between Level and Structure appears to disappear gradually. The findings here are in accordance with the results reported in Section 6.4.1.3. above.

#### 6.4.2.5. Implicational Analysis

Implicational analysis (Chapter 3), is our next method for analyzing the data. This kind of analysis is chosen for the following reasons:

- 1) On the group level, variability is evident in the realization of Negation and it appears that the variation is conditioned by the negative particle in question. Examination of the behaviour of learners within the groups is necessary to determine whether and to what extent these same trends are evident on the level of the individual learner and can thus provide data concerning the systematicity of the learners' variable realization of the Negation system in Arabic.
- 2) Implicational analysis is important to analyze the underlying operating characteristics of a group of items (here negative

particles/variants) to determine whether they form an implicational order. To put it differently implicational analysis indicates if each of the variables is implicationally related to the other variables. If the implication holds a learner who has control of variable 2 also has control of variable 1, but not vice versa, in an increasing scale of difficulty.

- 3) In order to have a valid scale there must be two special properties: the scale must be unidimensional, that is, the items must all measure movement towards or away from a particular entity or form. In the case of this analysis what is being measured is the degree of movement towards the acquisition of the Arabic negation system. The second condition is that the scales must be cumulative which implies that component items can be ordered by degree of difficulty and that individuals who respond positively to a difficult item will do the same to less difficult items and vice versa.

This cumulative and implicational property make implicational scaling fruitfully useful in isolating developmental stages or sequences in accuracy/acquisition studies, because the technique gives us a more complete reflection of the process of learning the TL (i.e. the actual process in which the rules are incorporated by each individual), hence, a more systematic way of describing the data. In implicational scaling we ask whether there is a scale of difficulty for the structures, given a range of students proficiency. There must be a range of proficiency in our learners (e.g. learner 1 is better than learner 2 because he/she got more items correct and so on). If all items are of equal difficulty and all the subjects of equal proficiency we do not have a scale of difficulty at all.

Two assumptions are made here: (a) that variables (i.e. negative particles/variants) are related to each other implicationally; (b) that the positions of learners in the implicational scale(s)

reveal their level of proficiency or their acquisition of certain variants (i.e. individuals can be placed on vertical lines (rows) for a display of their positions on an IL continuum).

This can be stated in the null hypothesis below:

- H<sub>0</sub>6.9      There is no pattern in the acquisition of negative particles by individual learners which fits into the overall pattern of group variability.

The implicational analysis in Negation data was computer-based (in order to examine if the sample falls into a pattern in the acquisition of the Arabic negative categories), and also the scaling of the grammatical items was done manually - this has the advantage of presenting the position of each individual learner in the scale(s). The scaling of the interrogative particles was computer-based only.

Having considered in this Section the rationale for the use of this technique of analysis, in the following Sections the details of the above method will be discussed as introductory remarks before giving the results of the analysis.

#### 6.4.2.5.1. Guttman Scale Analysis

As explained and discussed above (Section 3.3.3.) there are three main types of implicational scaling: bimodal, trimodal and multi-valued. Each type of scaling has a different degree of sensitivity to the implications in the data. Bimodal scaling is the least sensitive of the scaling method. However, it provides a good initial indication of the scalability of the data and is a useful preliminary to the more sensitive scaling techniques.

Statistics described below have been devised which enable the degree of fit of the group to the proposed pattern to be determined and hence indicate whether there is a significant implicational relationship between the grammatical categories being scaled. Such significant patterns are able to provide evidence of systematicity underlying learners' variable production. Significantly - scaled data for a group can then

provide evidence of possible developmental stages and thus of a developmental sequence in the acquisition, here, of Arabic Negation and Interrogation systems.

(a) Division Point In Guttman scales, data is scaled in terms of a binary distinction. In the case of linguistic data this involves the choice of a suitable division point above which a learner's performance will be considered to indicate acquisition; i.e. dichotomising data through the use of a cutting point into 2 portions: acquired (1) and not acquired (0). The choice of such a division point is necessarily arbitrary, but with data which conforms to an implicational pattern the same or very similar results should occur regardless of what this division point is.

The data on Negation (as well as Interrogation) for all learners was scaled bimodally, using the SPSS subprogramme Guttman Scale. The division point of 80% was used to delineate the binary ( $\pm$  acquired) distinction in line with criteria used in other studies (e.g. Cazden et al. 1975; AL-Jumaily 1982; Borland 1984; Okanlawon 1984 and War 1984), and because traditional learning curves have been shown to begin to slow down at this level.

(b) The Coefficient of Reproducibility which is a measure of the extent to which a respondent's scale is a prediction of one's response pattern/trend. Mathematically, it is the result of dividing the total number of errors by the total number of responses and subtracting the result from 1. It is calculated according to the following formula:

$$R = 1 - \frac{\text{no. of deviations}}{\text{no. of rows} \times \text{no. of columns}}$$

The value of (R) varies from 0 to 1 and an  $R \geq 0.90$  is generally held to indicate a valid scale.

(c) The Minimum Marginal Reproducibility (MMR)

"constitutes the minimum coefficient of reproducibility that could have occurred for the scale given the cutting points used and the proportion of respondents passing and failing each of the items. It is calculated by



summing the maximum marginals for each item [i.e. add all correct responses] and dividing this sum by the total number of responses".

(Nie et al. 1975: 533).

(d) The Percent Improvement (PCI) is the difference between the coefficient of reproducibility and the minimum marginal reproducibility (i.e.  $R - MMR$ ), and it indicates the extent to response patterns rather than the inherent cumulative interrelation of the variables used.

(e) The Coefficient of Scalability(S) Its calculation is somewhat more complex than that of  $R$  and involves the use of two further statistics,  $MMR$  and  $PCI$  above.  $S$  is obtained by dividing the  $PCI$  by the difference between 1 and the  $MMR$  i.e.

$$S = \frac{PCI}{1 - MMR}. \quad \text{This also varies from 0 to 1.}$$

According to Nie et al. (1975: 533), for a scale to be "truly unidimensional and cumulative"  $S$  should be  $\geq 0.60$ . (Hatch and Farhady (1982: 180-183) describe in detail how the above calculations are to be obtained manually).

Figures 6.8A and B demonstrate the scaling procedures and kind of results obtained.

Figure 6.8A: A Perfect Guttman Scale

Scale Type	A	B	C	D	E
5	1	1	1	1	1
4	0	1	1	1	1
3	0	0	1	1	1
2	0	0	0	1	1
1	0	0	0	0	1
0	0	0	0	0	0

The ideal pattern above means that all respondents who passed only one item would pass item E and no others. Respondents passing 2 items would always pass item D and E, and not A or B. The passing of a more difficult item would never be associated with rejecting a less difficult one.

However, data rarely, if ever, perfectly fit the expectation of the researcher. Many factors may cause deviation from the expected pattern. Most important of all (in this case) is the changing linguistic system of SL learners. The test of scalability of the items in the Guttman procedure is the degree to which the data need fit the model. Each deviation from the expected pattern is counted as an error. The errors are then accumulated and a number of standardized coefficients are produced from them to enable the researcher to determine if the items do indeed form a Guttman scale (i.e. a scale which is both unidimensional and cumulative).

Figure 6.8.B below illustrates items that do not form a good bimodal scale.

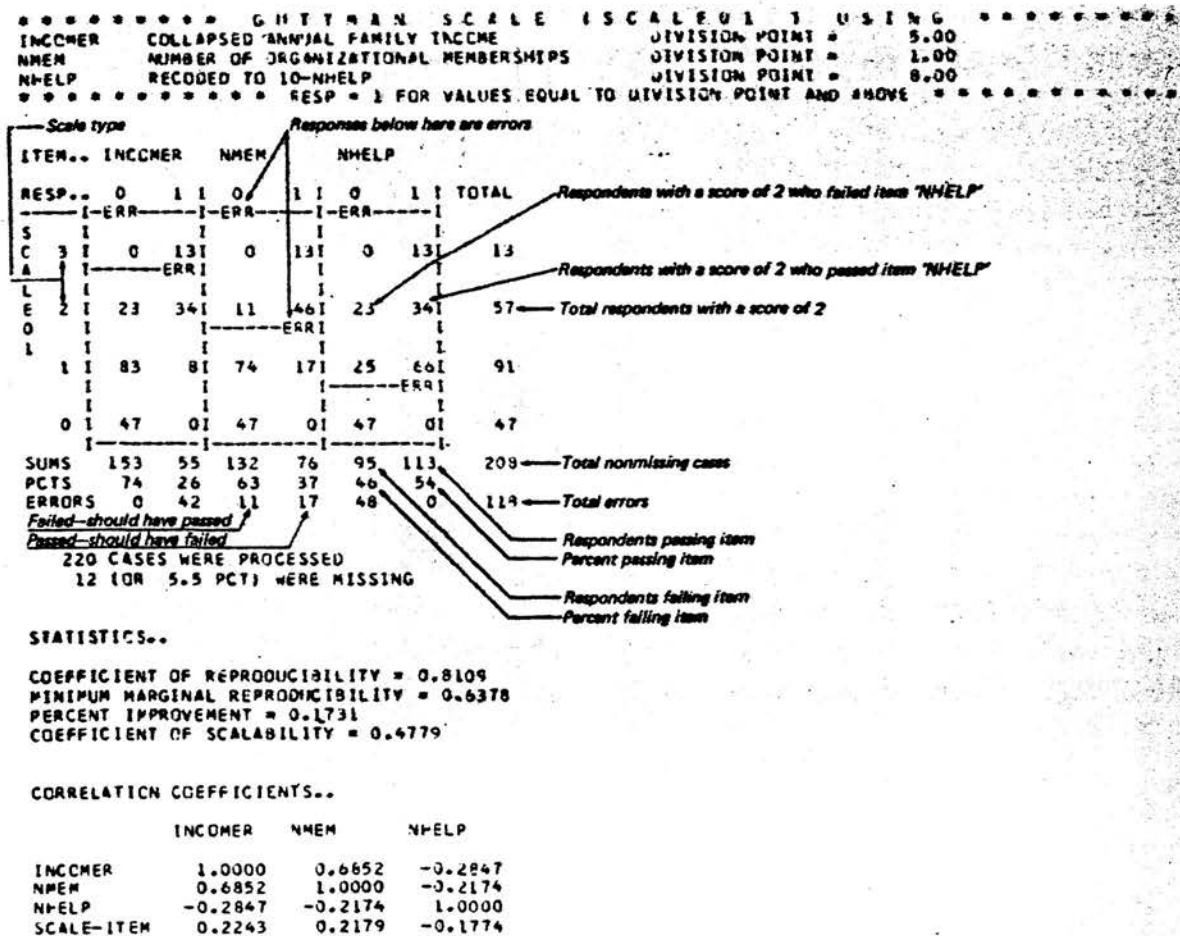


FIGURE 6.8.B: Output from subprogram GUTTMAN SCALE illustrating a set of items which do not form a good scale.

The left value under each of the items gives the number of respondents who failed the items when they should have passed it and the right value indicates the number of respondents who passed the item when they should have failed it. The left value under the heading ERRORS of the most difficult items in any scale will always be 0, as will the rightmost value of the least difficult item, for this is the only way that respondents can enter the maximum and minimum scale types. It should be also noted that in the above figure and others using the same subprogramme, ERR is printed above those respondents who passed an item when they should have failed it or failed an item when they should have passed it. PCTS indicates the percent of respondents passing and failing each item.

A further examination of the figure reveals a large number of errors among those who should have passed the least difficult item, but failed it, hence points to the weakness of these items as a Guttman Scale. It is to account for these discrepancies and to assess the validity of scales obtained that the statistics enable the determination of whether the scale produced is meaningful.

As an aid to the user in determining whether a particular item or group of items did, or did not constitute a scale, the SPSS subprogramme Guttman Scale provides a set of correlation coefficients. First, each item is correlated with every other item to yield the inter-item correlation matrix. The correlation coefficients are Yule's Q. Second, a set of part-whole correlations is printed. The part-whole correlations consist of each item being correlated with the sum of all other items. The coefficients are Biserial. These measures enable the user to easily spot items that are not positively related to other items in the scale.

#### 6.4.2.5.1.1. Guttman Scale: Group Trends

##### Results in Negation Data: Learners Pooled

The first analysis that was done was to see if an implicational pattern can be found within the Negation data if we ignore the

distinction between the tasks and treat all the data as one group (i.e. 109 learners). Figure 6.9 below gives the results of our analysis.

Figure 6.9: Guttman Scale: Negation Data (Tasks combined)

ITEM..	PCTLAYS			PCTLAN			PCTLAM			PCTLA:			
RESP..	0	1	I	0	1	I	0	1	I	0	1	I	TOTAL
	I-ERR			I-ERR			I-ERR			I-ERR			
G	I		I		I		I		I		I		
U	4	I	0	26	I	0	26	I	0	26	I	0	26
T		I	I-ERR			I		I		I		I	
S		I		I		I		I		I		I	
C	3	I	1	1	I	1	1	I	0	2	I	0	2
A		I		I	I-ERR			I		I		I	
L		I		I		I		I		I		I	
E	2	I	7	0	I	6	1	I	0	7	I	1	6
		I		I		I	I-ERR			I		I	
		I		I		I		I		I		I	
	1	I	3	0	I	3	0	I	2	1	I	1	2
		I		I		I		I	I-ERR			I	
		I		I		I		I		I		I	
	0	I	71	0	I	71	0	I	71	0	I	71	71
	I			I			I			I			
SUMS	82		27	81	28		73	36		73	36		109
PCTS	75		25	74	26		67	33		67	33		
ERRORS	0		1	1	1		0	1		2	0		6

112 CASES WERE PROCESSED  
3 (OR 2.7 PCT) WERE MISSING

#### STATISTICS..

COEFFICIENT OF REPRODUCIBILITY = 0.9862  
MINIMUM MARGINAL REPRODUCIBILITY = 0.7087  
PERCENT IMPROVEMENT = 0.2775  
COEFFICIENT OF SCALABILITY = 0.9528

#### Results in Negation Data: Learners' Performance on Each Task

The next analysis that was carried out was to see if (1) an implicational pattern can also be found when the tasks differences are taken into consideration. Another issue to investigate here, is that (2) whether the same implicational order exists with the acquisition of the same item on the two different tasks. Figures 6.10 A and B show the results of the investigation.

Figure 6.10.A: Guttman Scale: Negation Data. Performance on Translation Task

ITEM..	PCTLAYS		PCTLAN		PCTLAM		PCTLA:		TOTAL
RESP..	0	1	0	1	0	1	0	1	
-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I									
G	I		I		I		I		
U	4	I	0	5	I	0	5	I	5
T		I	-----ERR		I		I		
S	I		I		I		I		
C	3	I	1	1	I	0	2	I	2
A		I		I	-----ERR		I		
L	I		I		I		I		
E	2	I	7	0	I	6	1	I	7
		I		I	I	-----ERR		I	
		I		I	I		I		
	1	I	1	0	I	1	0	I	1
		I		I	I		I	-----ERR	
		I		I	I		I		
	0	I	4	0	I	4	0	I	4
-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I									
SUMS	50		6	49	7	42	14	42	56
PCTS	99		11	88	13	75	25	75	25
ERRORS	0		1	1	0	0	1	0	4

56 CASES WERE PROCESSED  
0 (OR 0.0 PCT) WERE MISSING

## STATISTICS..

COEFFICIENT OF REPRODUCIBILITY = 0.9821  
MINIMUM MARGINAL REPRODUCIBILITY = 0.8170  
PERCENT IMPROVEMENT = 0.1652  
COEFFICIENT OF SCALABILITY = 0.9024

Figure 6.10.B Guttman Scale: Negation Data. Performance on Manipulation Task

ITEM..	PCTLAYS		PCTLAN		PCTLAM		PCTLA:		TOTAL
RESP..	0	1	0	1	0	1	0	1	
-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I									
G	I		I		I		I		
U	4	I	0	2	I	0	2	I	2
T		I	-----ERR		I		I		
S	I		I		I		I		
C	3	I	0	0	I	0	0	I	0
A		I		I	-----ERR		I		
L	I		I		I		I		
E	2	I	0	0	I	0	0	I	0
		I		I	I	-----ERR		I	
		I		I	I		I		
	1	I	2	0	I	1	1	I	2
		I		I	I		I	-----ERR	
		I		I	I		I		
	0	I	3	0	I	3	0	I	3
-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I									
SUMS	32		21	32	21	31	22	31	53
PCTS	60		40	60	40	58	42	58	42
ERRORS	0		0	0	0	0	1	1	2

56 CASES WERE PROCESSED  
3 (OR 5.4 PCT) WERE MISSING

## STATISTICS..

COEFFICIENT OF REPRODUCIBILITY = 0.9906  
MINIMUM MARGINAL REPRODUCIBILITY = 0.5943  
PERCENT IMPROVEMENT = 0.3962  
COEFFICIENT OF SCALABILITY = 0.9767

### Interpretation of the above Figures

Judging from the results the following points are apparent:

- 1) Our analysis indicates that, when we ignore the tasks differences, the acquisition of the negative particles constitute a valid implicational pattern in which /la:/ is acquired first, followed by /lam/ and /lan/ and finally /laysa/ (Figure 6.9.).
- 2) Even when we scaled the learners according to tasks (i.e. on each task, taking into consideration tasks differences), we found significant results with the coefficients of reproducibility of 0.98 and 0.99 (for Translation and Manipulation respectively), as well as highly significant coefficients of scalability of 0.90 and 0.98 for Translation and Manipulation respectively. These coefficient values indicate that the acquisition of the four negative particles form a linear implicational series.
- 3) Task difference seems to make shift in regularities of rule application and therefore, the order of acquisition is affected across tasks. Closer examination of Table 6.10.B reveals that there are no subjects in Scale-Types 2 and 3. Hence, there are only three Scale-Types: 0, 1 and 4. Twenty one learners score correctly the 4 negative particles, while only two subjects acquire one negative particle. The majority (thirty students) supply incorrect categorial use of all negative particles. See also Section (6.4.2.5.1.2.) for analysis of individual behaviour.
- 4) Since the Guttman scale is a model used to determine the developmental stages subjects go through in their attempt to acquire, in this case, the Arabic negation system, we can conclude that for this group of learners the acquisition of the four variants of negation is implicationally ordered with /la:/ being the most favoured (i.e. acquired early), and /laysa/ the most difficult (hence acquired in later stages).
- 5) By positing an inherent order within the Arabic negation

categories, we are, in fact, stating another axiom - that the semantic notions (here Negation) and linguistic manifestations of tense (since the negative particle is a tense marker in Arabic), while strongly correlated are different from each other. In other words, negative particles are a source of variation in the performance of learners (refer to Section 6.4.2.2.).

- 6) This analysis admittedly obscures certain aspects of individual variations since it does not count learners who use variably the linguistic features observed. Also the use of a division point necessarily obliterates all the variation above and below it and thus loses very valuable information. However despite this drawback, the (use of) implicational scales is a very good instrument for revealing in a clear-cut way developmental stages in our learners' IL. The following analysis reveals the actual scores of each subject from which we can have a multi-valued scale (Refer to App. 3.7A. and B).

#### 6.4.2.5.1.2. Guttman Scale: Individual Behaviour

Our next consideration was an attempt to determine whether the acquisition of the Arabic negation system is hierarchically ordered in an implicational pattern on the level of individuals. In the tables that follows (6.18 and 6.19) the learners are marked implicationally on the basis of their application probabilities. The deviations are indicated by asterisks.

#### Interpretation of the Tables

Two of the scales (Tables 6.18A and B) show beyond any doubt a well-established implicational pattern cross-sectionally, this indicates that there is a hierarchy of learning the Arabic Negation system. Table 6.18A gives the scores for the 56 subjects with the four negative particles on the Translation task. Table 6.18B gives the same scores in bimodal form using, again, the 80% division point. The data in bimodal form shows clearly the five different scale type, (i.e. 0000, 1000, 1100, 1110 and 1111). The first is that of lowest scoring learners:



Table 6.18: Scores and Bimodal form of Scores for Negation: TRANSLATION TASK

no.	A: Scores				B: Bimodal Scale			
	Negative Particles				Negative Particles			
	la	lam	lan	laysa	la	lam	lan	laysa
16	98.8	97.50	96.94	91.77	1	1	1	1
23	94.12	90.00	89.79	91.77	1	1	1	1
30	92.94	91.25	91.84	91.77	1	1	1	1
49	89.41	87.50	88.78	84.71	1	1	1	1
6	89.41	86.25	79.59	81.18	1	1	1	1
54	88.24	86.25	76.53*	80.00	1	1	0*	1
42	84.71	83.75	82.65	81.18	1	1	1	1
19	84.71	83.75	81.63	77.65	1	1	1	0
47	77.65*	82.50	80.61	77.65	0*	1	1	0
56	89.41	86.26	76.53	76.47	1	1	0	0
48	84.71	81.25	66.33	65.88	1	1	0	0
40	82.35	81.25	71.43	58.82	1	1	0	0
8	81.18	81.25	75.51	57.65	1	1	0	0
20	81.18	81.25	64.29	75.29	1	1	0	0
5	80.00	80.00	52.04	75.29	1	1	0	0
46	80.00	78.75	75.51	51.77	1	0	0	0
45	80.00	78.75	57.14	52.94	1	0	0	0
36	80.00	77.50	75.51	77.65	1	0	0	0
55	81.18	76.25	71.43	72.94	1	0	0	0
15	76.47	73.75	51.02	70.59	0	0	0	0
44	75.29	71.25	59.18	52.94	0	0	0	0
4	74.12	73.75	45.92	49.41	0	0	0	0
38	72.94	70.00	44.89	37.65	0	0	0	0
34	71.76	70.00	40.82	49.41	0	0	0	0
12	71.76	71.25	60.20	72.94	0	0	0	0
1	69.41	67.50	26.53	44.71	0	0	0	0
14	68.24	67.50	28.57	37.65	0	0	0	0
7	65.88	63.75	42.86	36.47	0	0	0	0
13	65.88	63.75	39.78	42.35	0	0	0	0
51	64.71	62.75	28.57	30.59	0	0	0	0
10	61.18	60.00	44.90	40.00	0	0	0	0
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
39	16.47	13.75	9.18	9.41	0	0	0	0

R = 0.98

S = 0.91

Table 6.19: Scores and Bimodal Form of Scores for Negation: MANIPULATION TASK

no.	<u>A:Scores</u>				<u>B:Bimodal Scale</u>			
	<u>Negative Particles</u>				<u>Negative Particles</u>			
	la:	lam	lan	laysa	la:	lam	lan	laysa
16	100	100	98	94	1	1	1	1
56	98	96	95	95	1	1	1	1
23	98	96	93	96	1	1	1	1
30	95	95	97	94	1	1	1	1
42	95	96	97	89	1	1	1	1
19	96	94	96	91	1	1	1	1
49	94	94	92	96	1	1	1	1
54	94	93	94	94	1	1	1	1
47	93	90	95	95	1	1	1	1
8	92	88	90	88	1	1	1	1
48	91	91	88	87	1	1	1	1
15	91	86	85	84	1	1	1	1
46	89	89	89	89	1	1	1	1
20	87	91	91	84	1	1	1	1
55	86	85	88	93	1	1	1	1
45	88	89	88	87	1	1	1	1
40	87	90	89	85	1	1	1	1
36	87	89	89	86	1	1	1	1
12	89	85	91	82	1	1	1	1
44	84	82	89	92	1	1	1	1
5	89	86	85	82	1	1	1	1
4	81	80	71	73	1	1	0	0
13	80	83	59	60	1	1	0	0
38	78	76	78	71	0	0	0	0
34	78	78	77	65	0	0	0	0
21	75	80*	74	64	0	1*	0	0
14	79	79	64	65	0	0	0	0
10	77	71	78	59	0	0	0	0
18	78	71	70	51	0	0	0	0
1	77	74	56	66	0	0	0	0
33	72	72	56	62	0	0	0	0
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
39	36	31	36	40	0	0	0	0

R = 0.99  
S = 0.98

e.g. 15 and 39, who have not reached the level of acquisition designated in any negative particle.

The next group (learners Nos. 36, 45, 46 and 55) have achieved  $\geq$  80% for negation realization with the /la:/ negative particle, but not in any of the others (i.e. 1000). In the third scale type, the students 48 to 5 have acquired the use of negation form with the two most favoured negative particles: /la:/ and /lam/, but not with the remaining two (i.e. 1100). In the fourth type (1110), only one subject is in this stage No. 19 - (notice that student No. 47 is a non-scale pattern), who has reached the 80% level with all negative particles with the exception of the least favoured /laysa/. In the final type, the negation is realized at  $\geq$  80% level with all negative particles (1111); (i.e. learners have categorically acquired all negative variables). Examples of the fifth type are learners 16-42, except subjects 56 and 54, who do not fit the scale pattern.

The implicational hierarchy among the negative particles can be clearly seen in Table 6.18A. If a subject has not reached the 80% level in the most favoured negative particle /la:/ this necessarily implies non-criterion performance with the remaining three negative particles. Similarly a '1' in the /lam/ negative particle implies a '1' in the most favoured negative particle, but does not imply anything about whether negation realization has been acquired with the two less favoured negative particles. A '1' in the least favoured negative particle: implies that there is a '1' in all the other more favoured negative variants.

Both implicational scales (Tables 6.18A and B), show not only the order of difficulty of the negative items but also the way in which learners from different level groups are ordered. It, therefore, seems justified to interpret the implicational analysis as possible acquisition continua.

Looking at Tables 6.19, A and B, we find only 3 scale types: '1111', '1100' and '0000'. It is as if there are just two items, the first (la:/lam) and the second is (lan/laysa). The

acquisition of the least favoured negative variation (lan and laysa) implies the acquisition of the most favoured ones (la: and lam). Obviously, this is due to the elicitation technique since in the first 32 sentences the negative particles were supplied (refer to Section 5.3. above).

#### 6.4.3. Interrogation: Variability According to Interrogative Particle

The next step in the analysis of the data was to investigate whether there was variation in the learners' realization of interrogative dependent on the type of interrogative particles required. For this analysis purposes, interrogation data were grouped as in Section 6.1. This was necessary, since (1) there were many interrogative variants beyond which the computer programme limited capacity (e.g. ANOVA<sup>2</sup> and Guttman Scale) can not cope with, also (2) it was hoped that such grouping will give a more complete picture of the learners' performance in Interrogation data, and hence will throw more light on the acquisition of the syntax of interrogative structures. Therefore, the following interrogative types will be discussed separately where possible.

1. Total Interrogation (Positive Int.+ Negative Int.)
2. Positive Interrogation (Positive Wh-Qs.+ Posit. Yes/No Qs.)
3. Negative Interrogation (Neg. Yes/No Qs. + Neg. Wh-Qs.)
4. Positive Wh-Qs.
5. Positive Yes/No Qs.
6. Negative Wh-Qs.

##### 6.4.3.1. Calculation of Means

Following the criteria for assessment outlined above (Section 5.5.), the learners' production was scored in Interrogation data for each task. The means of scores are summarized in Table 6.20 (The following figures are computed through the SPSS subprogramme Breakdown in which a one-way ANOVA is also supplied. Here the number of subjects in Translation is 56, while in Manipulation the number is 53, thus, there are 3 missing cases (i.e. 5.4 PCT)).

---

2. Separate ANOVAs were computed using SPSS (one-way ANOVA) and BMDP (Factorial Designs/2/3-way ANOVA).

Table 6.20: Means of Performance Scores: Interrogation

Task	Translation					Manipulation				
LEVEL INT. T.	L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
Tot.Int	33.42	57.46	69.98	77.51	87.27	45.48	64.54	74.02	82.27	93.72
P. Int	37.83	61.60	72.23	79.25	88.45	50.66	66.99	76.65	84.56	94.63
N Int.	5.49	31.25	55.73	66.49	79.79	12.71	49.05	57.39	67.71	87.96
P.Wh.Qs.	36.21	60.10	71.72	79.59	89.20	46.82	64.18	75.51	83.40	94.49
P.Y/N.Qs.	43.45	66.85	74.02	78.06	85.88	63.97	76.74	80.62	88.60	95.10
N.Wh.Qs.	5.63	32.68	55.36	66.37	80.71	12.38	48.92	56.93	67.86	87.83

Where: Int = Interrogative; T = Type;  
P = Positive; N = Negative;  
Qs= Questions; Y/N = Yes/No

The means are also graphically displayed in Figures 6.11A and B below.

Figure 6.11.A: Mean Scores of Each Level: Translation Task

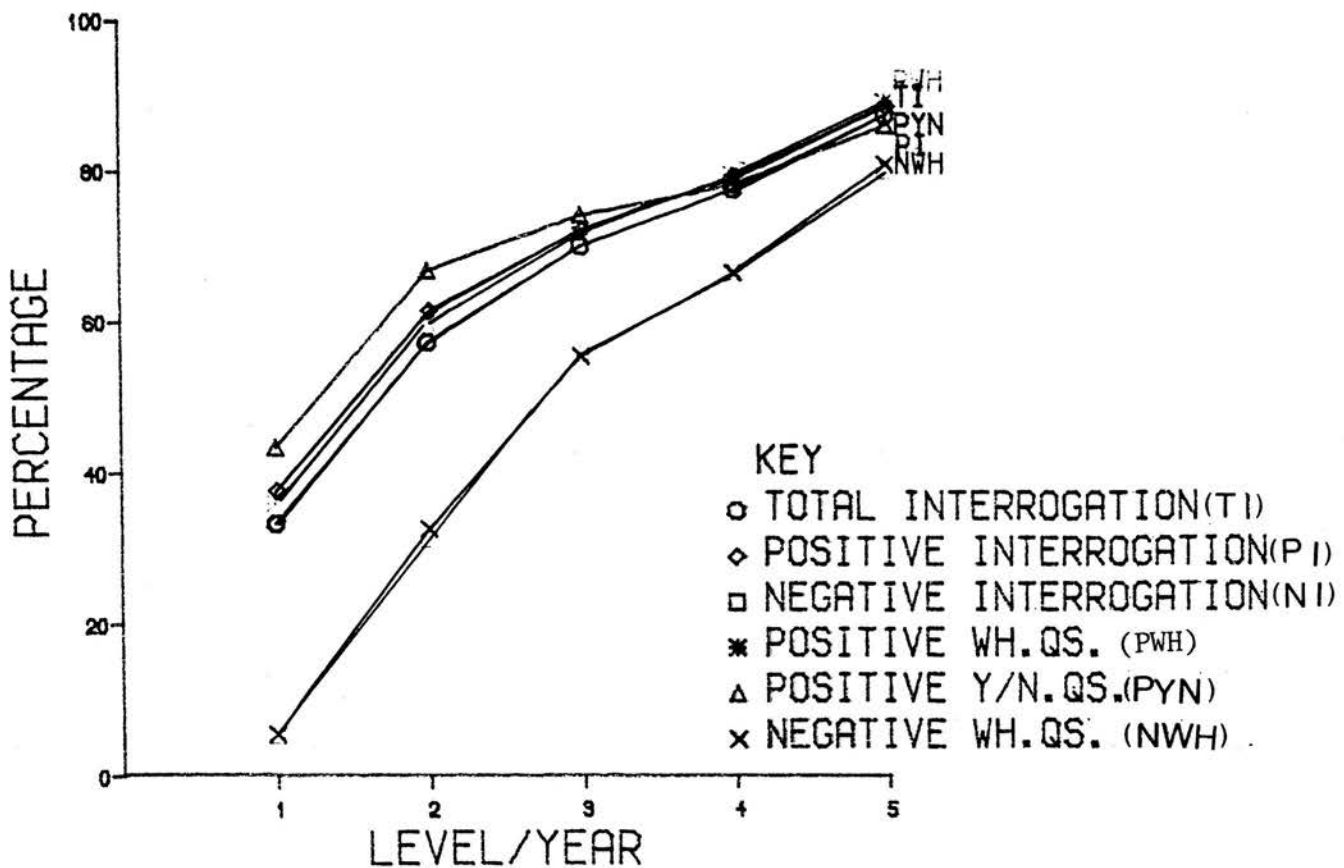
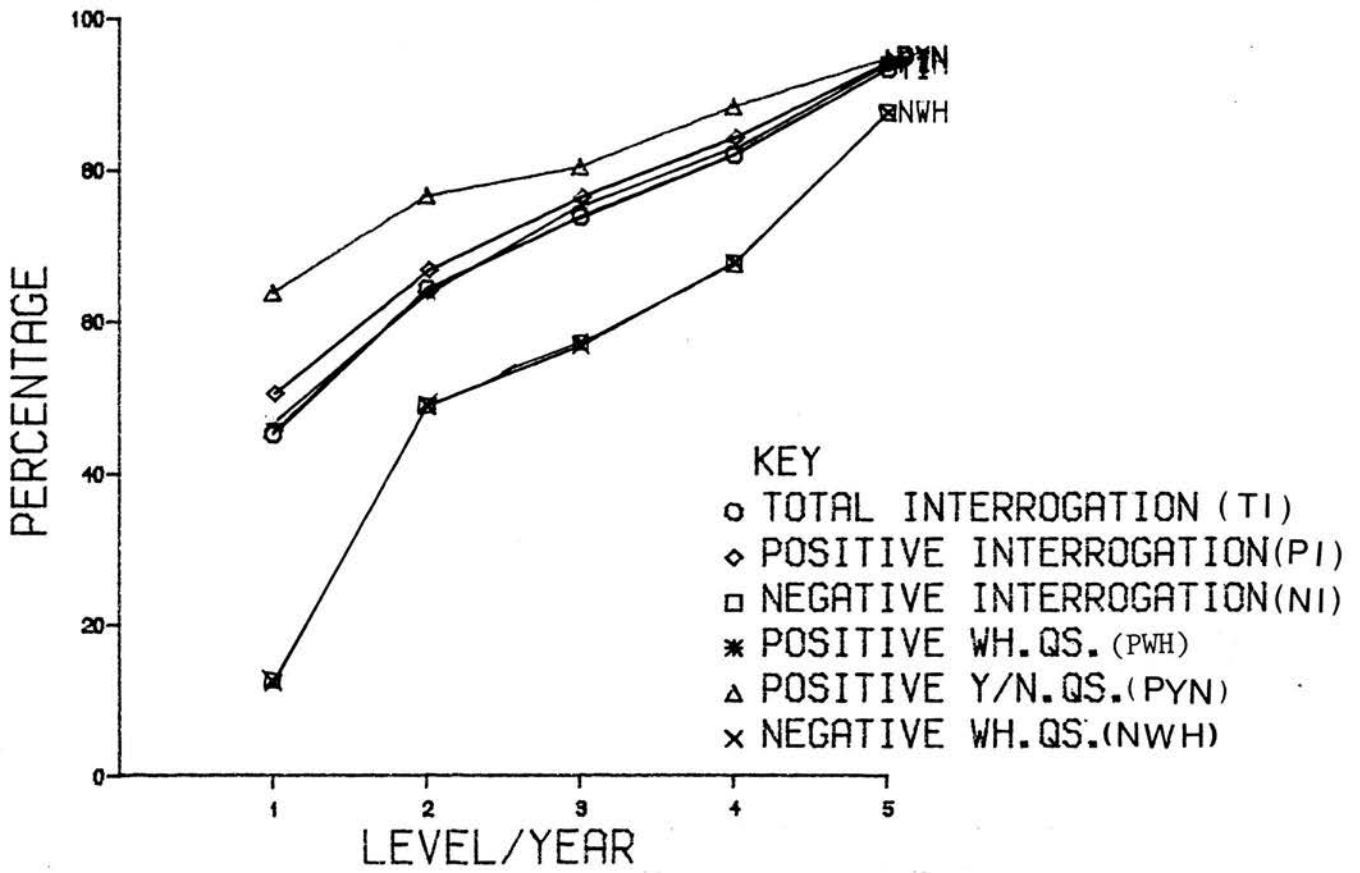


Figure 6.11.B: Mean Scores of Each Level: Manipulation Task



## Results

- (1) From the above Table and graphs it is apparent that the means of all level groups increase from each level to the next, which supports the findings in Section 6.2.
- (2) In this analysis too, the Manipulation task is more favoured than the Translation task (refer to Section 6.3.).
- (3) When comparing the means along each level, it appears that the positive Yes/No questions were the most favoured interrogative type; while the negative interrogation as well as negative Wh-questions were the least favoured (this issue is further analyzed in the following Section).

### 6.4.3.2. ANOVA: Interrogative Type as Factor

To assess the effect the interrogative types and the other two factors (Task and Time) have on the learners' performance, an Analysis of Variance was undertaken. For this analysis purpose, the interrogative data were divided into three components: (1) Positive Wh - Qs, (2) Positive Yes/No Qs and (3) Negative Interrogation. Dividing the Positive Interrogation into (1) and (2) above was necessary, since we want to investigate whether there are differences between the realization of Yes/No Qs. and Wh-Qs. As for the third interrogative type, there was only one negative Yes/No question item on each task which made it impossible to separate the negative Wh-Qs. and negative Yes/No Qs., for the ANOVA programme.

To determine whether significant differences exist due to the interrogative types, the following hypotheses are to be tested:

- |                           |   |
|---------------------------|---|
| <u>H<sub>0</sub> 6.9</u>  | The three interrogative categories are not different from each other. In other words, there are no significant differences between Yes/No Qs. and Wh-Qs; also there are no significant differences between positive and negative interrogation. |
| <u>H<sub>0</sub> 6.10</u> | There is no order of acquisition of Arabic Interrogation system by the subjects.  |



Using the BMDP ANOVA programme, we computed the means of the three interrogative types on each task. Table 6.21 summarizes the obtained results.

Table 6.21: Means of the Three Interrogative Types on Each Task

CELL MEANS FOR 1-ST DEPENDENT VARIABLE								MARGINAL
G	R	S	A	B	C	D	E	
B1C1	1	1	46.90000	64.09091	75.54545	83.33333	94.44444	72.73585
B1C2	1	2	11.00000	43.09091	49.81818	59.08333	76.77778	47.77358
B1C3	1	3	63.90000	76.72727	80.36364	88.41667	95.22222	80.84906
B2C1	2	1	35.00000	60.09091	71.63636	79.66667	89.66667	67.20755
B2C2	2	2	3.80000	28.63636	48.36364	57.83333	71.22222	41.88679
B2C3	2	3	43.30000	66.81818	74.27273	77.91667	86.00000	69.69811
MARGINAL			33.98333	56.57576	66.66667	74.37500	85.55556	63.35849
COUNT			10	11	11	12	9	53

Where B1 = Manipulation;      B2 = Translation  
 C1 = Positive Wh-Qs.;      C2 = Negative Interrogation;  
 C3 = Positive Yes/No Qs.

### Results

- (1) In the above table, under the heading 'Marginal' (horizontal line) development due to exposure to TL data is apparent (Section 6.2.).
- (2) Again, the Manipulation task is less difficult than the Translation task (Section 6.3.).
- (3) Looking at the table, it seems that the order of interrogative particles from the most to the least favoured is not identical in both tasks. Although in the two tasks the least favoured type is Negative Interrogative, the orders of the first two types do change. The orders of acquisition from the least favoured to the most favoured are:

Neg. Int. → Positive Wh-Qs. → Positive Yes/No Qs.

and Neg. Int. → Positive Yes/No Qs. → Positive Wh-Qs.

on Translation and Manipulation respectively. (This point will be discussed later in Section 6.4.3.7.).

### The Variance Ratio (F)

The values of F obtained for each of the effects of the independent variables: the Interrogative Types and the Tasks Difference, are given in Table 6.22.

Table 6.22: ANOVA: Interrogative Types as Factors

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ANALYSIS OF VARIANCE FOR 1-ST  
DEPENDENT VARIABLE = B1C1

		B1C2	B1C3	B2C1	B2C2	B2C3		
	SOURCE	SUM OF SQUARES		DEGREES OF FREEDOM		MEAN SQUARE	F	TAIL PROB.
1	MEAN	1267218.39690		1		1267218.39690	34838.02	0.0000
	G	90877.15253		4		22719.28813	624.59	0.0000
	ERROR	1745.97955		48		36.37457		
2	R	4587.12340		1		4587.12340	625.37	0.0000
	RG	893.08454		4		223.27114	30.44	0.0000
	ERROR	352.08527		48		7.33511		
3	S	55164.17953		2		27582.08977	1745.17	0.0000
	SG	5038.52629		8		629.81579	39.85	0.0000
	ERROR	1517.26616		96		15.80486		
4	RS	520.71079		2		260.35539	47.51	0.0000
	RSG	525.40993		8		76.17624	14.27	0.0000
	ERROR	526.08064		96		5.48001		

Where B1=Manipulation; B2=Translation  
C1=Positive Wh-Qs.; C2=Negative Interrogation;  
C3=Positive Yes/No Qs.; G=Level; R=task  
S =Negative Particle/Variant

According to the significant F values maintained above, it has been established that there are statistically significant differences in learners' performance due to interrogative types involved in the two tasks. (Notice that all the F ratios are significant  $p < 0.00001$ ). Hence, our Null Hypotheses  $H_0$  6.9 and  $H_0$  6.10 are rejected in favour of their working hypotheses. Another point to mention here, is that although the F values for the main variables are highly significant when measured separately, the F values of the interaction between Structure and Task as well as the interaction between Structure and Level are also statistically significant.

#### 6.4.3.3. Scheffé-Tests

##### 6.4.3.3.1. Comparisons of Group Means: Interrogative Type as Factor

Scheffé-test was calculated to investigate whether differences exist between all groups as a result of interrogative types and not only at the level of overall variation (obtained by F value). Relevant statistics (Tables 6.21 and 6.22) were used to calculate the following results (Table 6.23).

Table 6.23: Scheffé-Test: Interrogative Type as Factor

	C2	C1	C3
Cell Means	44.83	69.97	75.28
Cell Totals	4751.98	7416.82	7979.68
C2 4751.98	0	**2664.84	**3227.70
C1 7416.82		0	**562.86
C3 7979.68			0

Where B1 = Manipulation, B2 = Translation, C1 = Positive Wh-Qs.,  
C2 = Negative Interrogation and C3 = Positive Yes/No Qs.

df = 48; MSE = 36.38; k - 1 = 3; no. = 106  
F = 2.80; F = 4.22; p = 0.01; Fs = 8.4, p 0.05  
Fs = 12.66, p 0.01

Calculated  $t'_{crit} = 254.61$  \* p. 0.05

Calculated  $t'_{crit} = 312.48$  \*\* p. 0.01

#### Results

Table 6.23 shows that all values are significant beyond the probability level of 0.01. Therefore, there are significant differences of the learners' performance according to the interrogative type.

##### 6.4.3.3.2. Test for Significant Interaction:

###### Interrogative Type by Task

Since F value for interaction between Task and Interrogative Type is highly significant ( $F = 47.51$ ,  $p > 0.00001$ ), Scheffé-test was calculated to determine whether significant interactions are found for each type on each task (not merely the overall interaction maintained by F ratios). Table 6.24 below shows the results.

Table 6.24: Scheffé-Test for Significant Interactions: Interrogative Type by Task

	B2C2	B1C2	B2C1	B2C3	B1C1	B1C3
Cell Means	41.89	47.77	67.21	69.70	72.74	80.85
Cell Totals	2220.17	2531.81	3562.13	3694.10	3855.22	4285.05
2220.17	0	**311.64	**1341.96	**1473.93	**1635.05	**2064.88
2531.81		0	**1030.32	**1162.29	**1323.41	**1753.24
3562.13			0	**131.97	**293.09	**722.92
3694.10				0	**161.12	**590.95
3855.22					0	**429.83
4285.05						0

Where B1 = Manipulation, B2 = Translation, C1 = Positive Wh-Qs., C2 = Negative Interrogation, C3 = Positive Yes/No Qs.

df = 96 (app.100); MSE = 5.48; k - 1 = 6; no. = 53;  
 F = 2.19. p 0.05      Fs = 13.14; p. 0.05; Fs = 17.94; p 0.01  
 = 2.99. p 0.01

Calculated  $t'_{crit} = 87.48$  \*p 0.05

Calculated  $t'_{crit} = 102.07$  \*\*p 0.01

### Results

As it is clear from the above table all the values of interaction are highly significant ( $p > 0.01$ ). This is an indication that it is not merely the difference of Interrogative Type which causes learners' variable performance, but both Task and Structure.

#### 6.4.3.3.3. Test for Significant Interaction:

##### Interrogative Type by Level

It has been established (Table 6.22) that the F value of interaction between Level and Interrogative Type is statistically significant. In this analysis we will further investigate this interaction in order to test whether this significant interaction between the dependent and the independent variable is found at all levels of proficiency. Table 6.25 reveals the results of the analysis.

Table 6.25: Scheffé-Test for Significant Interaction: Interrogative Particles by Level

	C2L1	C2L2	C1L1	C2L3	C3L1	C2L4	C1L2	C3L2	C1L3	C2L5	C3L3	C1L4	C3L4	C3L5	C1L5
Cell Means	7.40	35.87	40.95	49.09	53.60	58.46	62.09	71.78	73.60	74.00	77.32	81.50	83.17	90.61	92.06
Cell Totals	162.80	789.14	900.90	1079.98	1179.20	1286.12	1365.98	1579.16	1619.20	1628.00	1701.04	1793.00	1829.74	1993.42	2025.32
162.8	0	*626.34	*738.10	*917.18	*1016.40	*1123.32	*1203.18	*1416.36	*1456.40	*1465.20	*1538.24	*1630.20	*1666.94	*1830.62	*1882.52
789.14	0	0	111.76	290.84	*390.06	*496.98	*578.84	*790.02	*830.06	*838.86	*911.90	*1003.86	*1040.60	*1204.28	*1236.18
			NS												
900.90			0	*179.08	*278.30	*385.22	*465.08	*678.26	*718.30	*727.10	*800.14	*892.10	*928.84	*1092.52	*1124.42
1079.98				0	99.22	*206.14	*286.00	*499.18	*539.22	*548.02	*621.06	*713.02	*749.76	*913.44	*945.34
					NS										
1179.20					0	106.92	*186.78	*399.96	*440.00	*448.80	*521.84	*613.80	*650.54	*814.22	*846.12
						NS									
1286.12						0	79.86	*293.04	*333.08	*341.88	414.92	*506.88	*543.62	*707.30	*739.20
							NS								
1365.98							0	*213.18	*253.22	*262.02	*335.06	*427.02	*463.76	*627.44	*659.34
1579.16								0	40.04	48.84	121.88	*213.84	*250.58	*414.26	*446.16
									NS	NS	NS				
1619.20									0	8.80	81.84	*173.80	*210.54	*374.22	*406.12
										NS	NS				
1628.00										0	73.04	*165.00	*201.74	*365.42	*397.32
											NS				
1710.04											0	91.96	128.70	*292.38	*324.28
												NS	NS		
1793.00												0	36.74	*200.42	*232.32
													NS		
1829.74													0	*163.68	*195.58
1993.42														0	31.9
														NS	NS
2025.32														0	0

Where C1 = Positive Wh-Qs., C2 = Negative Interrogation, C3 = Positive Yes/No Qs. L = Level  
MSE = 15.81; df = 96 (app. 100); k - 1 = 15; no. = 22; F = 1.79 . p = 0.05; F = 2.26. p = 0.01; Fs = 25.06; p = 0.05;  
Fs = 31.64; p = 0.01  
Calculated t'<sub>crit</sub> = 132.03, p = 0.05  
Calculated t'<sub>crit</sub> = 148.36, p = 0.01  
NS = Not Significant

### Results

The results displayed in Table 6.25, indicate again that there are significant interactions between Level and Interrogative Type ( $p > 0.01$ ), only 14 values are insignificant. Comparisons of Cell Means suggest that C2 (i.e. Negative Interrogation) was the least favoured structure at all levels. Positive Yes/No questions (C3), on the other hand were the most favoured interrogative type at all levels (with the exception of L4 and L5, on the Manipulation Task in which Positive Wh-Qs. were the most favoured). However, the differences between the Positive Yes/No Qs. and Positive Wh-Qs. are gradually decreasing when moving towards higher levels of proficiency. Thus, at L5 we find no significant difference between C3 and C1 (the means are 90.61 and 92.06 respectively). The case is also true at Level 4 (C1 = 81.5, C3 = 83.17).

#### 6.4.3.4. Calculation of Means : Positive Wh-Questions

What we did next was to ascertain whether variation exists in the learners' realization of each positive Wh-question particle. Thus, the means of the seven Wh-question particles (see Section 6.1.) were calculated. Table 6.26 below gives the results. Also a graphic display (Figures 6.12 A and B) show the mean scores of each level of proficiency for the different question particles.

Table 6.26: Means of Performance Scores: Positive Wh-Qs.

Task		Translation					Manipulation				
LEVEL	L1	L2	L3	L4	L5	L1	L2	L3	L4	L5	
Wh.P.											
How	25.33	53.25	65.48	75.10	86.79	42.86	61.69	75.97	84.52	94.84	
Why	40.26	62.66	70.83	80.06	88.93	45.71	66.56	74.35	84.82	95.24	
What	41.19	59.10	72.14	81.77	93.13	46.88	63.64	75.28	84.38	97.22	
When	38.64	61.65	74.74	79.69	91.25	45.00	65.34	76.71	81.77	95.49	
Where	39.77	57.50	71.67	79.17	88.50	46.00	61.14	74.10	82.50	93.33	
Which	5.05	45.20	59.03	69.91	79.72	37.22	51.52	64.14	76.62	87.96	
Who	59.55	78.64	85.42	89.38	95.50	61.25	78.18	86.82	89.17	97.78	

Figure 6.12A: Mean Scores of Each Level: Translation Task

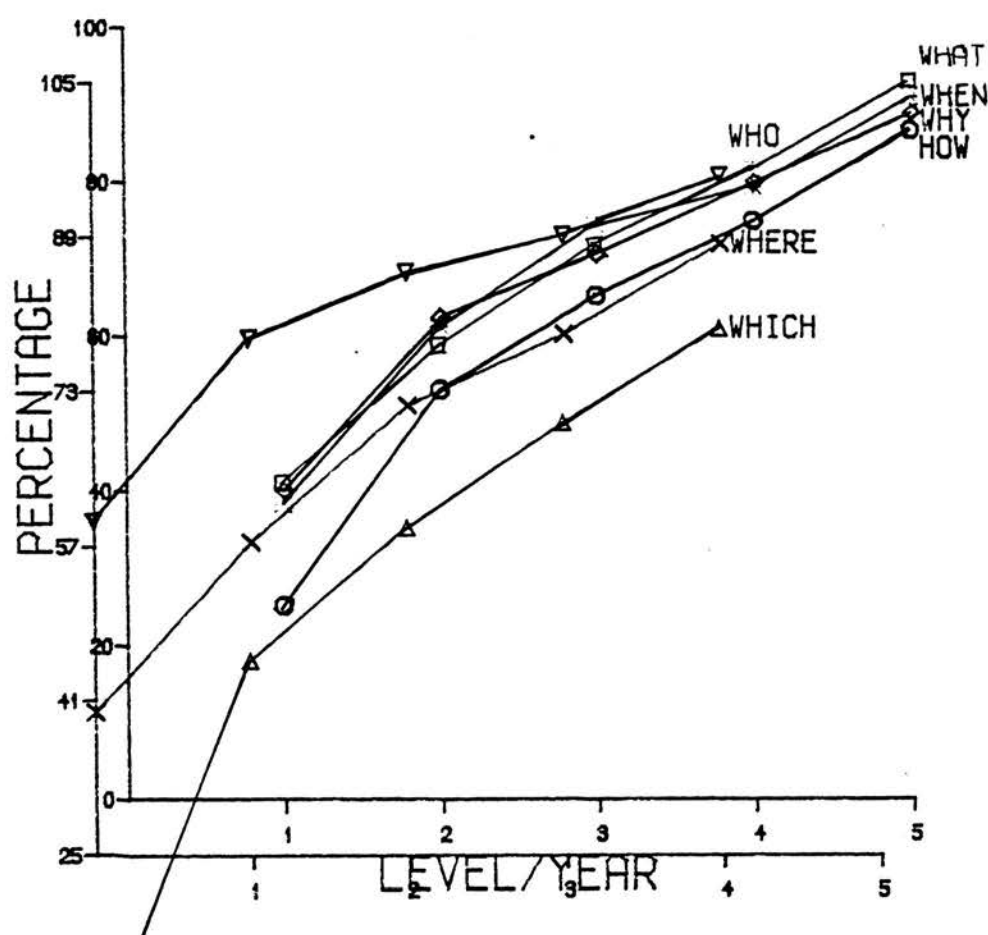
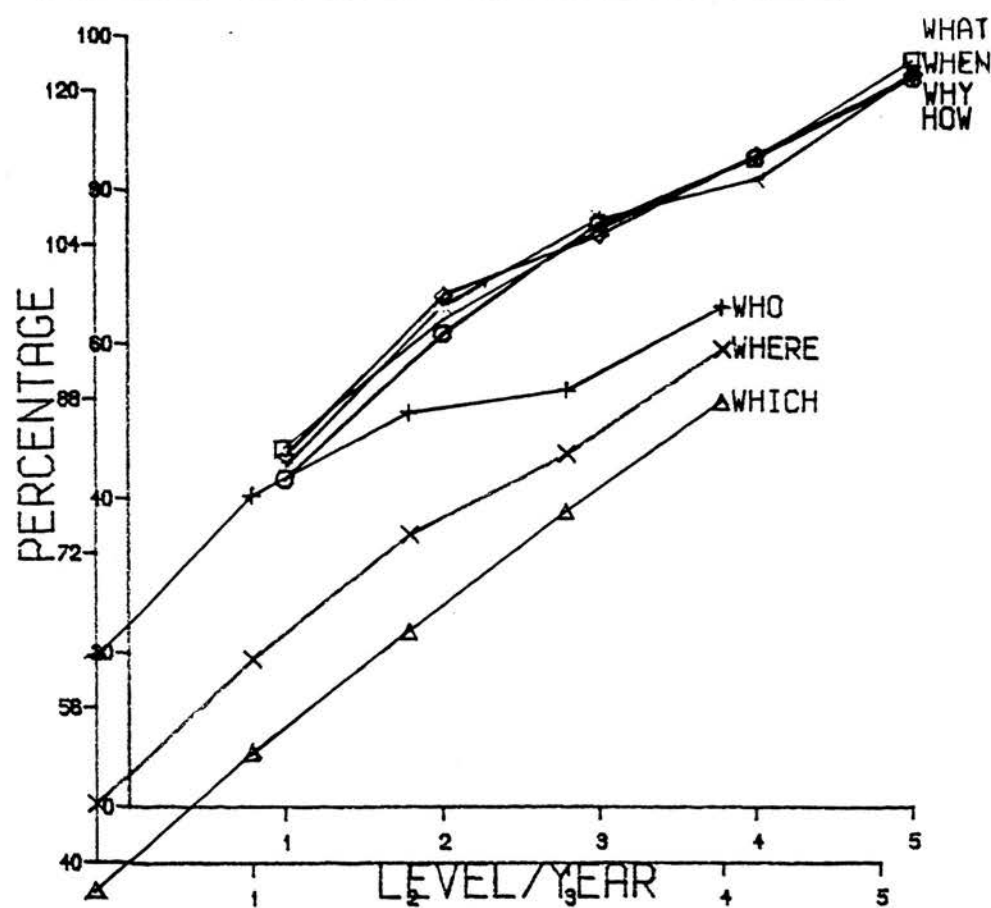


Figure 6.12B: Mean Scores of Each Level: Manipulation Task





### Interpretation of the above Results

- 1) Comparisons of the learners' performance on the 5 levels of proficiency reveal improvements according to time on both tasks.
- 2) Better performances are found in the Manipulation task as opposed to the Translation task.
- 3) As for the differences due to question particles, we found that WHICH seems to be the least favoured by the learners. Looking at Table 6.26 we notice that the mean score of WHICH at Level 1 of proficiency on the Translation task is only 5.05. Amazingly, it jumps to 45.20 at Level 2 (L2). Starting from L2 onwards, the improvement percentage is about 10%. The increase of the mean at L2, in comparison with L1, is probably due to the fact that students had not been introduced to that particular Wh-question variant.

When comparing all the means of the Wh-question particles at each level of proficiency, still WHICH appears to be the most difficult for our subjects, since the gain scores for the advanced students are 79.72 and 87.96 (for Translation and Manipulation respectively), while the gain scores for the other question particles (at the same level of proficiency) are  $\geq 87$  on the Translation task and  $\geq 93$  on the Manipulation task. Tentatively, this is due to the complicated syntax of WHICH, which differs from the other Wh-question particles (refer to Section 4.2.9.3.1.2.). Next in line of difficulty appears to be HOW questions followed by WHEN, WHERE, WHY and WHAT (in that order) with only a very slight difference in improvement percentage. In the final position of least difficulty comes WHO questions.

#### 6.4.3.5. ANOVA: Wh-Question Particle as Factor

From the above analysis (Section 6.4.3.3.) a trend appears to be emerging. In this Section we test the hypotheses below in order to determine if significant differences exist due to the Wh-question particle.

H<sub>0</sub> 6.11

There are no differences in the realization of Arabic interrogation system according to Wh-question particles.

H<sub>0</sub> 6.12

There is no order of acquisition of Wh-question in Arabic by the students.

The following results (Table 6.27) are obtained through the BMDP ANOVA programme.

Table 6.27: Means of 7 Wh-Question Particles on Each Task

CELL MEANS FOR 1-ST DEPENDENT VARIABLE

								MARGINAL
G		=	A	B	C	D	E	
R	S							
B1C1	1	1	42.80000	61.63636	76.18182	84.66667	94.88889	71.96226
B1C2	1	2	47.00000	63.72727	75.27273	84.41667	97.33333	73.35849
B1C3	1	3	45.20000	65.45455	76.63636	81.50000	95.66667	72.71698
B1C4	1	4	45.90000	61.09091	73.90909	82.41667	93.33333	71.18868
B1C5	1	5	37.00000	51.63636	64.09091	76.75000	87.88889	63.30189
B1C6	1	6	61.20000	77.90909	87.18182	89.68333	97.77778	82.58491
B1C7	1	7	45.90000	66.54545	74.36364	84.83333	95.33333	73.30189
B2C1	2	1	24.30000	53.27273	65.54545	75.66667	87.22222	61.18868
B2C2	2	2	41.40000	59.18182	72.54545	81.58333	94.10000	69.58491
B2C3	2	3	38.00000	61.72727	74.72727	79.50000	92.22222	69.15094
B2C4	2	4	38.70000	57.36364	71.45455	78.91667	89.00000	67.01887
B2C5	2	5	2.50000	45.18182	59.45455	69.91667	75.88889	51.58491
B2C6	2	6	58.30000	78.36364	85.54545	89.50000	95.55556	81.50943
B2C7	2	7	38.90000	62.54545	70.72727	80.25000	88.88889	68.26415
MARGINAL			40.50714	61.83117	73.40260	81.35714	92.07143	69.76550
COUNT			10	11	11	12	9	53

Where B1 = Manipulation; B2 = Translation,  
 C1 = How; C2 = What; C3 = When; C4 = Where;  
 C5 = Which; C6 = Who; C7 = Why.

From the analysis we can conclude the following:

- 1) Development over time is apparent from each level of proficiency to the next. This supports the findings in Section (6.2.) that Time/Level is a significant factor for variable performances of the different levels in suppliance of the correct Wh-question particle, i.e. Level does differentiate the learners' performance.
- 2) The Translation task is more difficult than the Manipulation task.
- 3) Judging from the cell means, a pattern of ordering is apparent on both tasks: Which → How → When/Where/Why → What → Who.

Thus, the tasks difference here did not influence the realization of the Wh-question particle, contrary to the findings in the analysis of the interrogative types (Section 6.4.3.2. above).

#### The Variance Ratio (F)

On the basis of the F values supplied in Table (6.28), it has been established that there are significant differences in the subjects' performance due to the different Wh-question particles. Virtually all the F ratios are statistically significant beyond the p 0.00001 level of significance.

Table 6.28: ANOVA: Wh-Question Particle as Factor

ANALYSIS OF VARIANCE FOR 1-ST									
DEPENDENT VARIABLE - B1C1 B2C3									
		B1C2 B2C4	B1C3 B2C5	B1C4 B2C6	B1C5 B2C7	B1C6	B1C7	B2C1	B2C2
	SOURCE	SUM OF SQUARES		DEGREES OF FREEDOM		MEAN SQUARE	F	TAIL PROR.	
1	MEAN	3583885.17521		1		3583885.17521	44364.50	0.0000	
	G	216844.62599		4		54211.15650	671.07	0.0000	
	ERROR	3877.57078		48		80.78272			
2	R	6282.99694		1		6282.99694	534.26	0.0000	
	RG	1637.60293		4		409.40073	34.81	0.0000	
	ERROR	564.49141		48		11.76024			
3	S	33530.26858		6		5588.37810	150.56	0.0000	
	SG	6360.88623		24		265.03693	7.14	0.0000	
	ERROR	10689.55851		288		37.11652			
4	RS	2562.11795		6		427.01966	61.62	0.0000	
	RSG	2274.73527		24		94.78064	13.68	0.0000	
	ERROR	1995.88737		288		6.93016			

Where B1 = Manipulation; B2 = Translation;  
 C1 = How; C2 = What; C3 = When; C4 = Where;  
 C5 = Which; C6 = Who; C7 = Why; G = Level;  
 R = Task; S = Structure

#### 6.4.3.6. Scheffé-Tests

##### 6.4.3.6.1. Comparison of Group Means: Wh-Question Particle as Factor

In order to investigate whether differences exist between all groups as a result of the Wh-Qs. particle and not only at the level of overall variation ( $F = 671.07$ ;  $p > 0.00001$ ), a Scheffé-test for comparison of group means was calculated. The relevant statistics were obtained from Tables 6.27, and 6.28. Table 6.29 shows the results of the analysis.

Table 6.29: Scheffe-Test: Wh-Question Particle as Factor

	C5	C1	C4	C7	C3	C2	C6
Cell Means	57.44	66.57	69.10	70.78	70.94	71.47	82.05
Cell Totals	6088.64	7056.42	7324.60	7502.68	7519.64	7575.82	8697.30
6088.64	0	**967.78	**1235.96	**1414.04	**1431.00	**1487.18	**2608.66
7056.42		0	268.18	446.26	463.22	*519.40	**1640.88
			NS	NS	NS		
7324.60			0	178.08	195.04	251.22	**1372.70
				NS	NS	NS	
7502.68				0	16.96	73.14	**1194.62
					NS	NS	
7519.64					0	56.18	**1177.66
						NS	
7575.82						0	**1121.48
8697.30							0

Where C1 = How, C2 = What, C3 = When, C4 = Where, C5 = Which, C6 = Who, C7 = Why

df = 48; MSE = 80.78; no. = 106;  $k - 1 = 7$ ;  $F = 2.21$ ;  $p = 0.05$ ;  
 $F = 3.04$ ;  $P = 0.01$ ;  $F_s = 15.47$ ;  $P = 0.05$ ;  $F_s = 21.28$ ;  $P = 0.01$

Calculated  $t'_{crit} = 514.69$  \* $P = 0.05$

Calculated  $t'_{crit} = 603.65$  \*\* $P = 0.01$

NS = Not Significant

### Results

From the Table (6.29), the following results are apparent:

- The learners' performance on WHO Qs. (C6) is significantly different from the other 6 Wh-Qs. particles. Also, WHO questions seem to be the most favoured.
- WHICH Qs. (C5) are also statistically different from the other Wh-questions. However, this Wh-particle appears to be the most difficult to acquire, hence the least favoured.
- The learners' performance on HOW Qs. is significantly different from that on WHAT Qs. On the other hand, HOW Qs. are not different from WHERE, WHY and WHEN questions.
- Apart from the exceptions mentioned above, the other Wh-question particles are not significantly different from each

Table 6.30: Scheffé-Test for Significant Interaction: Wh-Q. Particle by Task

	B2C5	B2C1	B1C5	B2C4	B2C7	B2C3	B2C2	B1C4	B1C1	B1C3	B1C7	B1C2	B2C6	B1C6
Cell Means	51.59	61.19	63.30	67.01	68.26	69.15	69.59	71.19	71.96	72.72	73.30	73.36	81.51	82.59
	104.59	3243.07	3354.90	3551.53	3617.78	3664.95	3688.27	3773.07	3813.88	3854.16	3884.90	3888.08	4320.03	4377.27
B2C5 104.59	0	<sup>**</sup> 3138.48	<sup>**</sup> 3250.31	<sup>**</sup> 3446.94	<sup>**</sup> 3513.19	<sup>**</sup> 3560.36	<sup>**</sup> 3583.68	<sup>**</sup> 3668.48	<sup>**</sup> 3709.29	<sup>**</sup> 3749.57	<sup>**</sup> 3780.31	<sup>**</sup> 3783.49	<sup>**</sup> 4215.44	<sup>**</sup> 4272.68
B2C1 3243.07	0	0	111.83	<sup>**</sup> 308.46	<sup>**</sup> 374.71	<sup>**</sup> 421.88	<sup>**</sup> 445.20	<sup>**</sup> 530.00	<sup>**</sup> 570.81	<sup>**</sup> 611.09	<sup>**</sup> 641.83	<sup>**</sup> 645.01	<sup>**</sup> 1076.96	<sup>**</sup> 1134.20
		NS												
B1C5 3354.9		0	<sup>**</sup> 196.36	<sup>**</sup> 262.88	<sup>**</sup> 310.05	<sup>**</sup> 333.37	<sup>**</sup> 418.17	<sup>**</sup> 458.98	<sup>**</sup> 499.26	<sup>**</sup> 530.00	<sup>**</sup> 533.18	<sup>**</sup> 565.13	<sup>**</sup> 1022.37	
B2C4 3551.53			0	66.25	113.42	<sup>**</sup> 136.74	<sup>**</sup> 221.54	<sup>**</sup> 262.35	<sup>**</sup> 302.63	<sup>**</sup> 333.37	<sup>**</sup> 336.55	<sup>**</sup> 768.50	<sup>**</sup> 825.74	
				NS	NS									
B2C7 3617.78				0	47.17	70.49	<sup>**</sup> 155.29	<sup>**</sup> 196.10	<sup>**</sup> 236.38	<sup>**</sup> 267.12	<sup>**</sup> 270.30	<sup>**</sup> 702.25	<sup>**</sup> 759.49	
					NS	NS								
B2C3 3664.95					0	23.32	108.12	<sup>**</sup> 3446.93	<sup>**</sup> 189.21	<sup>**</sup> 219.95	<sup>**</sup> 223.13	<sup>**</sup> 655.08	<sup>**</sup> 712.32	
						NS	NS							
B2C2 3688.27						0	84.80	125.61	<sup>**</sup> 165.89	<sup>**</sup> 196.63	<sup>**</sup> 199.81	<sup>**</sup> 631.76	<sup>**</sup> 689.00	
							NS	NS						
B1C4 3773.07							0	40.81	81.09	111.83	<sup>**</sup> 115.01	<sup>**</sup> 546.96	<sup>**</sup> 604.20	
								NS	NS	NS	NS			
B1C1 3813.88								0	40.28	71.02	74.20	<sup>**</sup> 506.15	<sup>**</sup> 563.36	
									NS	NS	NS			
B1C3 3854.16								0		30.74	33.92	<sup>**</sup> 465.87	<sup>**</sup> 523.11	
										NS	NS			
B1C7 3884.90										0		<sup>**</sup> 435.13	<sup>**</sup> 492.37	
											NS			
B1C2 3888.08											0	<sup>**</sup> 431.95	<sup>**</sup> 489.19	
B2C6 4320.03												0	57.24	
													NS	
B1C6 4377.27													0	

Where B1 = Manipulation, B2 = Translation, C1 = How, C2 = What, C3 = When, C4 = Where, C5 = Which, C6 = Who, C7 = Why

DF = 288 (app. 200); MSE = 6.93; no. = 53; k - 1 = 14;; F = 1.74, p = 0.05; F = 2.17, p = 0.01

Fs = 24.36, p = 0.05; Fs = 30.38, p = 0.01

Calculate  $t'_{crit} = 133.77$  \*p = 0.05

Calculate  $t'_{crit} = 149.43$  \*\* p = 0.01

NS = Not Significant

other.

#### 6.4.3.6.2. Test for Significant Interaction: Wh-Question

##### Particle by Task

It has been seen from Table 6.27 that the F value for the interaction between Wh-question Particle and Task is highly significant ( $F = 34.81$   $p > 0.00001$ ). In this analysis, we test whether all interactions of Task by Structure are significant. Using the statistics in Tables 6.27 and 6.28 we calculated a Scheffé-test. The results are displayed in Table 6.30 above.

##### Results

The results (Table 6.30) show that there is a very significant interaction between Structure and Task ( $p > 0.01$  in most cases). However, some interactions are not significant, e.g. B1C5 with B2C1 (WHICH on the Manipulation Task with HOW on the Translation task). The learners' performance on WHICH Qs. (the least favoured Wh-particle) on Manipulation is not significantly different from that on HOW on Translation. This supports the findings reported before (Section 6.3.2.), which indicated that learners' variable performance is due to tasks differences.

Learners' performances on WHY, WHEN and WHERE on Translation are not statistically different. On Manipulation WHEN, HOW, WHY and WHAT are not significantly different. Variability across tasks, then, is apparent from the above results. However, this is not the case with WHO Qs., since the interaction between B26C (WHO on Translation) and B1C6 (WHO on Manipulation) is not significant.

#### 6.4.3.6.3. Test for Significant Interaction: Wh-Question

##### Particle by Level

To determine whether there are significant interactions at each level of proficiency for every Wh-question particle, a Scheffé-test was calculated. The relevant statistics were taken from ANOVA output (Tables 6.27 and 6.28). The results are displayed in Appendix 3.8. Since this analysis involves the interaction of 35 means, we concentrate mainly on non-significant interactions for interpreting the Scheffé-table. The results support the

previous findings that although there is a highly significant interaction between Wh-Q. Particle and Level ( $p > 0.01$  in most cases), the interaction decreases as we move towards higher levels of proficiency, hence making the value of interaction insignificant.

#### 6.4.3.7. Guttman Scale Analysis: Interrogation

What we did next was an examination of the different interrogation data that have been already investigated in our previous analyses (6.4.3.1. and 6.4.3.2.) in order to determine if any implicational pattern(s) can be observed within these categories: Total Interrogation, Positive Interrogation, Negative Interrogation, Positive Wh-Qs., Positive Yes/No Qs. and Negative Wh-Qs. (refer to Section 6.4.3.).

#### Results in Interrogation Data: Learners Pooled

First, the tasks difference was ignored, hence 109 learners were implicationally scaled. The results are displayed in Figure 6.13.

Figure 6.13: Guttman Scale: Interrogation Data. (Tasks Combined)

ITEM.	PCTMWH		PCTMWH2		PCTINT3		PCTINT2		PCTINT		PCYSNOMP		TOTAL
RESP.	0	1	0	1	0	1	0	1	0	1	0	1	
	I-ERR	I	I-ERR	I	I-ERR	I	I-ERR	I	I-ERR	I	I-ERR	I	
G	I	I	I	I	I	I	I	I	I	I	I	I	1
U	6	0	11	0	11	0	11	0	11	0	11	0	
T	I	I	ERR	I	I	I	I	I	I	I	I	I	
S	I	I	I	I	I	I	I	I	I	I	I	I	
C	5	15	01	0	151	0	151	0	151	0	151	0	15
A	I	I	I	I	I	I	I	I	I	I	I	I	
L	I	I	I	I	I	I	I	I	I	I	I	I	
E	4	16	01	16	01	0	161	0	161	0	161	0	16
	I	I	I	I	I	I	I	I	I	I	I	I	
	I	I	I	I	I	I	I	I	I	I	I	I	
	3	1	01	1	01	1	01	0	11	0	11	0	1
	I	I	I	I	I	I	I	I	I	I	I	I	
	I	I	I	I	I	I	I	I	I	I	I	I	
	2	2	01	2	01	2	01	0	21	0	21	2	2
	I	I	I	I	I	I	I	I	I	I	I	I	
	I	I	I	I	I	I	I	I	I	I	I	I	
	1	6	01	6	01	6	01	6	01	5	11	1	6
	I	I	I	I	I	I	I	I	I	I	I	I	
	I	I	I	I	I	I	I	I	I	I	I	I	
	0	68	01	68	01	68	01	68	01	68	01	68	68
	I	I	I	I	I	I	I	I	I	I	I	I	
SUMS	108	1	93	16	77	32	74	35	73	36	71	38	109
PCTS	99	1	85	15	71	29	68	32	67	33	65	35	
ERRORS	0	0	0	0	0	0	0	2	0	1	3	0	6

112 CASES WERE PROCESSED  
3 (OR 2.7 PCT) WERE MISSING

STATISTICS.	YULE'S G-PCYSNOMP	PCTINT	PCTMWH2	PCTINT2	PCTMWH	PCTINT3
COEFFICIENT OF REPRODUCIBILITY = 0.9908	PCYSNOMP 1.0000	0.9867	1.0000	0.9913	1.0000	1.0000
MINIMUM MARGINAL REPRODUCIBILITY = 0.7584	PCTINT 0.9867	1.0000	1.0000	1.0000	1.0000	1.0000
PERCENT IMPROVEMENT = 0.2324	PCTMWH2 1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
COEFFICIENT OF SCALABILITY = 0.9620	PCTINT2 0.9913	1.0000	1.0000	1.0000	1.0000	1.0000
	PCTMWH 1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	PCTINT3 1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Where: PCYSNOMP = Positive Yes/No Qs.  
PCTINT = Positive Wh-Qs.  
PCTINT2 = Positive Interrogation  
PCTINT3 = Total Interrogation (Positive Qs. + Negative Qs.)  
PCTMWH2 = Negative Wh-Qs.  
PCTMWH = Negative Interrogation



### Results

The computer output of the scalegram analysis in the above figure shows a high coefficient of reproducibility (0.99). Since the figure is higher than 0.9, the interrogative categories indicate valid scale types. It is clear from the results that the pattern of responses is uniform for most learners with the exception of 6, three of whom failed Positive Yes/No Qs., where they should have passed (as seen from the left values under the heading ERRORS); one passed Positive Wh-Qs., where he/she should have failed and two passed Positive Interrogation, where they should have failed. The 6 errors, therefore, show that not all learners fit into the same pattern of acquisition. However, since a majority of respondents are implicationally distributed, we are in a position to reject the Null Hypothesis ( $H_0$  6.10) for its working hypothesis, that there is indeed an implicational relationship among the interrogative categories under investigation.

From the implicational analysis presented above the following order of acquisition in the interrogation data is apparent, (notice that the order is from right to left i.e. most favoured to least favoured).

- a) Positive Yes/No Qs.
- b) Positive Wh-Qs.
- c) Positive Interrogation
- d) Total Interrogation (Positive + Negative Interrogation)
- e) Negative Wh-Qs.
- f) Negative Interrogation (e + Neg. Yes/No Qs.)

As regarding the inter-item relationships and inherent orders, the intercorrelation of 4 of the items are perfect. Two items, however, did not constitute perfect scale types: Positive Wh-Qs. and Positive Interrogation.

### Results in Interrogation Data: Learners' Performance on Each Task

After this broad analysis, we then analyzed the data again to determine if two separate series can be found based on the tasks difference. Figures 6.14 A and B reveal the results obtained from the analysis.

Figure 6.14A: Guttman Scale: Interrogation Data. Performance on Translation

ITEM.	PCTMWH	PCTMWH2	PCYSNOMP	PCTINT3	PCTINT2	PCTINT	TOTAL
RESP.	0 1 I 0 1 I 0 1 I 0 1 I 0 1 I 0 1 I						
Q	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
U	6 I 0 0I 0 0I 0 0I 0 0I 0 0I 0 0I 0						0
T	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
S	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
C	5 I 7 0I 0 7I 0 7I 0 7I 0 7I 0 7I 0						7
A	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
L	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
E	4 I 5 0I 5 0I 0 5I 0 5I 0 5I 0 5I 0						5
	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
	3 I 0 0I 0 0I 0 0I 0 0I 0 0I 0 0I 0						0
	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
	2 I 2 0I 2 0I 2 0I 2 0I 0 2I 0 2I 0						2
	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
	1 I 1 0I 1 0I 1 0I 1 0I 1 0I 0 1I 0						1
	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I-ERR	I
	0 I 41 0I 41 0I 41 0I 41 0I 41 0I 41 0I 41						41
SUMS	56 0 49 7 44 12 44 12 42 14 41 15						56
PCTS	100 0 88 13 79 21 79 21 75 25 73 27						
ERRORS	0 0 0 0 0 0 0 0 0 0 0 0						0

56 CASES WERE PROCESSED  
0 (OR 0.0 PCT) WERE MISSING

## STATISTICS.

COEFFICIENT OF REPRODUCIBILITY = 1.0000  
MINIMUM MARGINAL REPRODUCIBILITY = 0.8214  
PERCENT IMPROVEMENT = 0.1786

COEFFICIENT OF SCALABILITY = 1.0000

VALUE'S &.	PCYSNOMP	PCTINT	PCTMWH2	PCTINT2	PCTMWH	PCTINT3
PCYSNOMP	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTINT	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTMWH2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTINT2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTMWH	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTINT3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Where: PCYSNOMP = Positive Yes/No Qs.  
PCTINT = Positive Wh-Qs.  
PCTINT2 = Positive Interrogation  
PCTINT3 = Total Interrogation (Positive Qs. + Negative Qs.)  
PCTMWH2 = Negative Wh-Qs.  
PCTMWH = Negative Interrogation

Figure 6.14B: Guttman Scale: Interrogation Data. Performance on Manipulation

ITEM	PCTMWH		PCTMWH2		PCTINT3		PCTINT		PCTINT2		PCYSNOMP			
RESP.	0	1 I	0	1 I	0	1 I	0	1 I	0	1 I	0	1 I	TOTAL	
	I-ERR		I-ERR		I-ERR		I-ERR		I-ERR		I-ERR			
Q	I		I		I		I		I		I			
U	6 I	0	1 I	0	1 I	0	1 I	0	1 I	0	1 I	0	1 I	1
T	I-ERR		I		I		I		I		I		I	
S	I		I		I		I		I		I		I	
C	5 I	8	0 I	0	8 I	0	8 I	0	8 I	0	8 I	0	8 I	8
A	I		I-ERR		I		I		I		I		I	
L	I		I		I		I		I		I		I	
E	4 I	11	0 I	11	0 I	0	11 I	0	11 I	0	11 I	0	11 I	11
	I		I		I-ERR		I		I		I		I	
	I		I		I		I		I		I		I	
	3 I	1	0 I	1	0 I	1	0 I	0	1 I	0	1 I	0	1 I	1
	I		I		I		I-ERR		I		I		I	
	I		I		I		I		I		I		I	
	2 I	0	0 I	0	0 I	0	0 I	0	0 I	0	0 I	0	0 I	0
	I		I		I		I		I-ERR		I		I	
	I		I		I		I		I		I		I	
	1 I	5	0 I	5	0 I	5	0 I	5	0 I	5	0 I	0	5 I	5
	I		I		I		I		I		I-ERR		I	
	I		I		I		I		I		I		I	
	0 I	27	0 I	27	0 I	27	0 I	27	0 I	27	0 I	27	0 I	27
	I		I		I		I		I		I			
SUMS	52	1	44	9	33	20	32	21	32	21	27	26	53	
PCTS	98	2	83	17	62	38	60	40	60	40	31	49		
ERRORS	0	0	0	0	0	0	0	0	0	0	0	0	0	

56 CASES WERE PROCESSED  
3 (OR 5.4 PCT) WERE MISSING

## STATISTICS..

COEFFICIENT OF REPRODUCIBILITY = 1.0000  
MINIMUM MARGINAL REPRODUCIBILITY = 0.6718  
PERCENT IMPROVEMENT = 0.3082  
COEFFICIENT OF SCALABILITY = 1.0000

SCALE'S G.	PCYSNOMP	PCTINT	PCTMWH2	PCTINT2	PCTMWH	PCTINT3
PCYSNOMP	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTINT	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTMWH2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTINT2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTMWH	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PCTINT3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Where: PCYSNOM= Positive Yes/No Gs.  
PCTINT = Positive Wh-Gs.  
PCTINT2= Positive Interrogation  
PCTINT3= Total Interrogation(Positive Gs. + Negative Gs.)  
PCTMWH2= Negative Wh-Gs.  
PCTMWH = Negative Interrogation

### Interpretation of the above Figures

From the implicational analysis presented above, the following trends have emerged:

- 1) Both scales are perfect. However, different tasks show different acquisition continua emerging (this is similarly the case for the Negation data in Sections 6.4.2.5.1.1. and 6.4.2.5.1.2.).

Both orders are given below:

<u>Translation</u>	<u>Manipulation</u>
a) Positive Wh-Qs.	Positive Yes/No Qs.
b) Positive Interrogation	Positive Interrogation
c) Total Interrogation	Positive Wh-Qs.
d) Positive Yes/No Qs.	Total Interrogation
e) Negative Wh-Qs.	Negative Wh-Qs.
f) Negative Interrogation	Negative Interrogation

As it can be seen, the two orders differ from that when the two tasks combined. Caution, therefore, is needed in interpreting the order of the implicational analyses.

In Translation, then, Wh-Qs. were easier than the Yes/No Qs. This is mainly because on the Translation task, the majority of learners did not produce Yes/No question particles which are different from Wh-question variants (see Section 4.2.9.3.). Some students (e.g. Subject No. 26) used declarative sentences to ask Yes/No questions. This is probably a first language transfer, since it is possible in English to use declarative sentences with correct intonations to ask Yes/No questions. This is also true in Arabic, but with spoken language and not the written one.<sup>3</sup> Also, there are no auxiliaries in Arabic, which make Yes/No questions more difficult to translate when learners do not know the correct particles.

Positive Yes/No Qs., on the other hand, were the most favoured

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3. Authors sometimes use declarative sentences to ask Yes/No Qs. They, however, convey the act of asking through certain words e.g. He asked " ...."? He wondered " ....."? etc.

on the Manipulation task, while the Positive Wh-Qs. were less favoured. As it has been mentioned earlier Positive Yes/No Qs. were also the most favoured, when the tasks were combined. This makes us wonder wouldn't it be the case that Positive Yes/No questions would have been the most favoured interrogative category if learners knew the correct particles to supply. (Further analysis of positive Wh-questions is given through ANOVA and Scheffé-tests above in Sections 6.4.3.5. and 6.4.3.6.).

- (2) It follows, then, that there are indeed idiosyncracies for learners' performance with regard to the performance of certain rule(s) in the two tasks. To put it differently, this supports the findings that there are characteristic differences between the two tasks, so that the application of rules is different. For instance, on the Translation task, learners found Wh-questions the easiest, while on Manipulation task the most favoured interrogative type was Yes/No questions.
- (3) The inter-item relationships on both tasks are perfect (Figures 6.14A and B). If the reader recalls that the intercorrelations of two of the items in Figure 6.13 were not perfect, they were highly significant though. This is explained by the change of order of individual items on each task, when treated separately.

#### 6.5. ERROR ANALYSIS

So far, data for all calculations were based on the occurrences of target-like negative and interrogative variables. Quantitative differences have been revealing in showing the acquisition of the structural distinction based on order of accuracy and showing variability according to three factors: Time, Task and Structure. Accuracy data, however do not show HOW and WHY the learners differ.

At this point it is necessary to stress that there is a need to find answers to these questions in SLA studies. Hence, a central

component of the theoretical framework of this study is the assumption that errors constitute an important part of SLA and this is indeed the fundamental claim of the IL hypothesis. An essential part of this investigation was the attempt to capture the systematic as well as variable IL behaviour of our learners. It was also implied that there will be a relationship between not only the types of errors but also the quantity of errors and the learners exposure to Arabic, there would then be more error types and a greater quantity of these errors at Level 1, than, for instance, at Level 5.

In this sense the nature of the analysis is qualitative rather than quantitative. The results of the following analysis look much more like psychological data than linguistic data, but an evaluation of the learners incorrect answers should help us to discover the acquisition process involved in the learning of the syntactic features under investigation.

#### 6.5.1. Preliminary Analysis

Preliminary analysis of the data involves the separation and classification of Negative variants and Question words in Yes/No and Wh-Qs. to identify error types. The error analysis below concentrates mainly on Negation data, since the error types found in the Interrogation data though important to identify, are not large enough in number to be displayed in a useful way. Also, the previous analyses of the interrogative data reveal some of the error types found in the learners' performance in Interrogation data. Thus, we will limit ourselves in analyzing errors found in Negation data. Though the display of results may include mainly the Negators (/la:/, /lam/, /lan/ and /laysa/), it is also considered necessary to look at the syntax of negation, i.e. negative sentences must be examined as a whole, as this will give a better picture of the error types.

Before presenting the error types, there are two issues to remember. First, there are serious problems in categorizing 'errors' and attributing their presence to one or the other factors - L1 or L2, the teaching situation or the interaction of

two or more causes (i.e. refer to Section 2.2.2.1.1.). The problem is enhanced by the learners' psychological strategies or processes, which until now remain vague and therefore immune to any definite assertions. What we call 'strategies', 'processes', are not best arrived at by our analysis of the surface structures and the intended meaning of the learners, and the gap between the two. In this investigation, the problem is complicated by the fact that the study is cross-sectional and involves a large number of learners who learn Arabic in different situations (namely different institutions and variable exposure to TL in an Arabic-speaking environment). A purely longitudinal study of a small number of learners would show a clear line of development from one stage to the other, and the possible causes of 'errors' are conveniently reduced to the L1 (e.g. borrowing, and positive or negative transfer), or the L2 (developmental).

Here, the classification of variants and error types are based on the following considerations: (i) developmental errors: these are acquisitional types based on the strategy of generalization which results in simple codes; (ii) in this study, we recognize that there are errors which cannot be attributed to purely developmental reasons since they are not reduced codes but are very elaborate, though in a way far removed from the TL.

The second issue we would like to mention before presenting the analysis is that in this investigation, the error type data is based on performances in the Translation task. There are valid reasons for this decision; the stress is on use in the Translation task which is very near spontaneous speech, rather than on routine morphological inflections in comparison with the Manipulation task. The latter is also restrictive because it allows very limited possible answers. This is clearer in Part A (i.e. Interrogation) since here the inflection was always correct, thus learners' task was only a matter of correcting the order of words in the given sentences. The Translation task, on the other hand, gives ample freedom for the learners to produce their own idiosyncratic forms while controlling the contexts for the structure



under investigation (refer to Sections 5.3.3; 5.3.4. and 6.3. above).

#### 6.5.2. Negation

In this Section we are going to present the errors that the learners made in their performance on negation. We discussed, earlier, (Section 5.5.3.) errors which are not going to be dealt with in this study. The types of errors identified in the data are outlined below starting with the most favoured negative particle, hence first to acquire and ending by the least favoured negative variable hence the most difficult to acquire.

It should be noted here, that although we present what may look like separate stages of development in negation acquisition, there is no clear cut differences between these developmental stages. On the contrary there is an overlap of two or more stages in the learners' performance.

- 1) /la:/: As seen from the previous analysis (Section 6.4.2.), the negative particle /la:/ was the most favoured negative particle. There are sub-stages within this stage (see also Section 5.5.2.).

##### (a) Incorrect order of /la:/

This error of the negation particle /la:/ with incorrect order and incorrect inflection seems to appear at the earliest stage of development and is, at first, generalized to all instances of negation. e.g.:

- (i) /qiṭaṭ la: takul attamr/ (Sub. No. 14. Sent. 43)  
Cats not eat dates
- (ii) /ba:?' alḥali:b la: yaḥdur/ (Sub. No. 2. Sent. 25)  
seller (of) milk not come

Note that the negative particle in Sentence (ii) should be /lam/ and not /la:/, which is an indication that /la:/ is overgeneralized to express the variable negative particles.

(b) /la:/ + verb + incorrect order of the remainder of the sentence

By 'remainder of the sentence' here is meant any constituent other than a verb whether it is a noun phrase, a pronoun, an adjective or a locative prepositional phrase, for example 'a teacher', 'he', 'sunny' or 'on the wall' consecutively. e.g.:  
 /la: yaklu:n alfawa:keh alqiṭa:t/ (Sub. No. 8. Sent.43)  
 not eat the fruit the cats

In Arabic the subject follows the verb and precedes the object. Note the overgeneralization of the plural morpheme in /alqiṭa:t/, since the correct plural is /alqiṭaṭ/. In this sub-stage, the inflection is variably incorrect.

(c) Pronoun + /la:/ + verb

Subjects like 29 and 12 translated the negative sentences (No. 62: "She does not like reading" and No. 63 "He does not come every week") with pronouns. This could be the result of mother tongue transfer. The inflection here was variably correct.

(d) Correct /la:/

In this sub-stage learners supplied correct negative sentences containing /la:/. The inflection here was correct. Examples of such students are: Subject Nos. 16 and 23.

2) lam/: This negative particle was the next most favoured by our learners. The following error types were identified in this stage:

(a) Non-occurrence of /lam/: At early stages many students could not supply the negative particle /lam/, in such a stage /la:/ was overgeneralized. Learner No. 2 is an example of this stage (see 1.(a) above). Learners 25 and 41 used /ma:/ or /la:/ but not /lam/. Since /ma:/ is similar to /lam/ it was accepted as correct, but these students used it similar to /la:/ (i.e. to convey present meaning).<sup>4</sup> e.g.:

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4. Ben Fraj (personal communication) argued that this might be ascribed to colloquial Arabic influence. Since the negative particle /ma:/ is most frequently used in Arabic dialects.

/ma: yuṣal ... / (Sub. No. 41, Sent. 15)  
not (past) arrive.

Note that the verb is in its infinitive case, however, it should be in the past.

(b) Occurrence of /lam/ : When /lam/ occurred in the learners' performance, variable error types were identified. Those error types were similar to (1a, 1b, 1c and 1d) above.

- 3) /lan/: The negative particle /lan/ seems to be more difficult than the above two negative variables. The learners' performance on this particle was very interesting. The following error types were identified with the use of /lan/.

(a) Non occurrence of /lan/: As with /lam/ the learners' use /la:/ to indicate the negative particle with future tense. So here also they were just overgeneralizing /la:/. The inflection as well as the order of the sentence were variably incorrect. e.g.:

/la: yaku:n ṣa'b/ (Sub. No.55 Sent. 61)  
not be difficult

An interesting phenomenon to note here is some learners' performance on "am/is/are going to" structures. Subjects 7, 15, 40, 50 and 53 translated literally the above structure (i.e. it was not translated as being equivalent to 'will', but as an equivalent to "go"), e.g.:

/ana la: aḡhab u'ti:k aljari:dah/ (Sub. 7, Sent. 11)  
I not go give you the newspaper

Though students tend not to transfer, this seems to be a grammatical transfer from English, since there is no such structure in Standard Arabic.

(b) /la:/ +  $\left\{ \begin{array}{l} \text{sa-} \\ \text{sawfa} \end{array} \right\} + V$

The next sub-stage of /lan/ negative particle is the use of the negative particle /la:/ which denotes present tense followed by the verb inflected for the future tense. Although there is an alternative form for negation of the

future :/sawfa la:/ (will/shall not), the perfect form for Arabic negation of future is /lan/. In this sub-stage, the inflection and the order of the sentence were variably incorrect. e.g.:

/hawa la: sayakuin mudarris/ (Sub. 33, Sent. 21)  
he not will be teacher.

(c) 
$$\frac{\text{/lan/} + \left\{ \begin{array}{l} \text{sa-} \\ \text{sawfa} \end{array} \right\}}{\quad} + V$$

This error appears after (b) and sometimes replaces it in all instances, however, they may often co-exist for some time before error-type (b) disappears. Learners in this stage marked the future twice, once by the negative particle and the other by the use of sa-/sawfa . The inflection was variably correct. e.g.:

/lan sawfa yal'abu:n kurat alqadam.../(Sub. 21, Sent.59)  
not (future) will play they foot ball....

(d) Correct /lan/: Learners supplied correct form for negation of future in this sub-stage. Most learners who were in this stage correctly supplied the inflection. Learners No. 23, 30 and 16 are examples of this stage.

4. /laysa/: As discussed earlier (Section 4.2.8.2.) the negative particle /laysa/ is used for equational sentences. The following error-types were found in learners' performance on /laysa/.

(a) Non occurrence of /laysa/: As with the other negative particles (i.e. /lam/ and /lan/) /la:/ was used instead of /laysa/. Thus, learners in this sub-stage translated sentences like "The capital is not big" as follows:

/la: kabi:r al'asimah/ (Sub. 35, Sent. 14)  
not big the capital

The inflection and the word order of the sentence are incorrect, as can be noted from the above example. The correct translation of the above sentence is /laysat al'-ašimah kabi:rah/.

(b) Use of /laysa/ without inflection: It has been mentioned above that /laysa/ is inflected for number and gender (Section 4.2.9.2.2.2.). Some learners, however, did not inflect /laysa/, e.g. learners Nos. 10, 40, 44 and 52. Student No. 52 for example used a separate pronoun to indicate number in sentence 7.

/laysa hawa mudarris/  
not he teacher

Also, the inflection of /mudarris/ here is not correct. The sentence should be translated as follows:

/laysa mudarrisan/

The noun here is in the accusative case.

(c) Correct /laysa/: Most of the advanced students supplied the correct form of /laysa/, which is inflected for number and gender suitable for the noun following it. Examples of students in such a stage are learners Nos. 23, 30 and 49.

Another interesting feature we noticed in our learners' performance is when translating sentences such as:

1. It is not going to rain (Sent. No. 2)
  2. They said it is not sunny in summer (Sent. 28).
- (see also sentences nos. 22, 51 and 56).

Here only some advanced students (Subjects 16, and 30) omitted, sometimes, the dummy 'It' and added either "the weather/the sky or the sun" according to the sentence in question. In Arabic, the pronoun should be understood from the verb, thus supplying the pronoun on the surface structure is considered to be a very poor style, unless the pronoun is supplied for emphasis, but this is not the case here. At the same time the negative particle is always at the beginning of the sentence as well as preverbal. So if learners translated Sentence (1) as:

/anaha lan tumter/  
it will not rain

The translation is not perfect. A better translation would be:

/lan tumtera (alsama?)/  
will not rain (the sky)

## 6.6. SUMMARY OF THE MAIN FINDINGS IN CHAPTER 6

- 1) Systematicity as well as variability were found in the learners' performance.
- 2) Variability in individual and group performance was analyzed and discussed according to the three factors outlined below:

a) Level as a function of time which was one of the main determinants of variable performance both for quantitative data and data based on error-types. The longer a learner has been exposed to Arabic, the better he/she becomes.

b) Task: Differences between tasks create variable performance. Each of the tasks (Translation and Manipulation) was significantly different from each other on both structures (i.e. Interrogation and Negation); this confirms the findings of other researchers and points out the relative differences in accessibility to and control of linguistic knowledge by learners. It was also found that the order of task-difficulty is:

Easiest	Difficult
Manipulation	Translation

Also, variability according to task was found to be patterned (i.e. though the Manipulation task seems easier to the learners, their performance fall into almost the same pattern of accuracy/acquisition of the structure under investigation).

c) Structure: Variation exists between and within the two main structures (i.e. Interrogation and Negation).

- i) Interrogation seems to be less difficult than Negation. This indicates that the syntax of negation and interrogation do not produce the same result even when the task is the same. Since most respondents scored better in interrogation than in negation, this indicates that Arabic negation especially the negative particles /lan/ and /laysa/ are syntactically more complex than interrogation.

- ii) The four negative particles constitute orders of sequences which are arranged implicationally as:

<u>Tasks combined</u>	<u>Translation</u>	<u>Manipulation</u>
/la:/	/la:/	/la:, lam/
/lam/	/lam/	
/lan/	/lan/	
/laysa/	/laysa/	/lan, laysa/

- iii) Within the interrogative types under investigation, the following patterns emerge:

<u>Tasks combined</u>	<u>Translation</u>	<u>Manipulation</u>
Positive Y/N Qs.	Positive Wh-Qs.	Positive Y/n Qs.
Positive Wh-Qs.	Positive Interrogation	Positive Interrogation
Positive Interrogation	Total Interrogation	Positive Wh-Qs.
Total Interrogation	Positive Y/N Qs.	Total Interrogation
Negative Wh-Qs.	Negative Wh-Qs.	Negative Wh-Qs.
Negative Interrogation	Negative Interrogation	Negative Interrogation

Note that the 'Negative Wh-Qs' and 'Negative Interrogation' are the least favoured, hence the most difficult to acquire.

- 3) The 'order' of acquisition based on accuracy data (cut point =  $\geq 80\%$ ) is another indication of systematicity in performance and/or in the structure within the interrogative and negative systems in Arabic.
- 4) It has been shown from the Scheffé-tests that there are significant interactions between each two of the three variables under investigation - (Time, Task and Structure). However significant higher-order interactions (i.e. Level by Task by Structure) were not subjected to further statistical analysis due to the complexities involved in interpreting such a complex data matrix (the smallest matrix involved the interaction of 20 means).



CHAPTER SEVEN  
INTERPRETATION AND DISCUSSION OF RESULTS

7.0. INTRODUCTION

The results presented in the previous Chapter must be seen as first steps towards a more comprehensive analysis. In this Chapter, then, these results of the empirical investigations will be discussed and interpreted in relation to the hypotheses formulated in Chapter 5.

To recapitulate, the sets of hypotheses in Group One deal with the nature of learners' IL. It will be argued that systematicity does actually underlie learners' often variable realization of TL features. One general hypothesis implied in this group is the theoretical discussion on the universal processes of language acquisition. It is assumed that these processes are closely related to the semantics of the intended meaning in communication. Therefore, the creative rather than the restructuring hypothesis will be supported. Also, the hypothesis that the IL continuum is a developmental continuum of increasing complexity is evident in our data, since learners can be said to be at different points of this continuum according to their proximity to the target norm.

Group Two hypotheses relate to the Translation:Manipulation distinction. In the interpretation of the results of the empirical investigation concerning variability brought about by the degree of formality of the tasks, the Models of the Nature of SL Learner's Competence discussed in Section (3.2.) regarding the 'Conscious grammar', the 'monitor' (Krashen 1976, '77), 'types of knowledge' (Bialystok 1978, '79), and the 'degree of formality of tasks' (Tarone 1979, '82), will be used. Differences in quantified performance scores, error types and types of strategies used will be discussed within this set of hypotheses. Therefore, Section (7.2.3.) will be allocated to the discussion of the learning (and communicative) strategies employed by the learners in their attempts to internalize the grammar of the TL.

The last sets of hypotheses addressed the question of the concept of developmental sequences in SLA: the sequences of development of Arabic negative and interrogative structures. The hypothesis that developmental sequences with overlapping stages is supported by the implicational analyses (Sections 6.4.2.5. and 6.4.3.7.) and Error Analysis (Section 6.5.). A developmental continuum will be built up for each of the two structural areas. The discussion on the developmental sequences of language acquisition will be related to Group One set of hypotheses. Thus, we will revisit the discussion of the universality of the sequence of development (Section 7.3.1.). In the course of the discussion, which is a universal as well as a pragmatic-functional based explanation, other related notions e.g. function vs. form, redundancy in language (i.e. markedness theory) will be brought up.

#### 7.1. THE NATURE OF THE IL CONTINUUM

In order to interpret and discuss the results in the framework of the Group One hypotheses, the following sections will be concerned with the characteristics of the IL continuum. Quantitative as well as qualitative data are supplied, where possible, to support our argument.

##### 7.1.1. The Systematicity Underlying the Learners' SLA

It has been established (Chapter 6) that variability both at the vertical and horizontal dimensions does exist in learners' performance. The analyses imply that variability is strictly conditioned by factors like the gradual, continuous process of learning (variability due to time/exposure to the TL), the nature of the tasks (i.e. variability according to tasks) and linguistic environments (variability according to structure).

Theoretically speaking, Corder (1973b) has noted that there may be as many different ILs as there are individuals who speak them. Whilst it is obviously to be expected that individuals will learn at different rates as a result of numerous factors of psychological, sociological and cognitive origin, systematicity underlying learners' performance is apparent. In fact what at first glance

appears to be a random fluctuation with no pattern, turns out to be highly systematic and structured.

Our data then suggest that the IL under investigation, although variable, is to some extent systematic in the Saussurian sense. Saussure's distinction between synchronic and diachronic study of language was based on "his conviction that every language, at a given time, constitutes an integrated system of relationship" (Lyons 1968: 50).

Therefore, the essence of systematicity must be defined as the existence of non-random patterns in the learners' SLA such that an underlying rule system can be described which governs the learners' production and thus determines in some structured way the course of their development in the learning, for example, of a feature of syntax. The existence of such a rule system implies that the acquisition is sequential, that it is possible to write rules which describe the system and sequence and enable the specification of a continuum of development.

Systematicity can exist on a number of levels of generality. On the broadest level all learners, as evidenced by conformance of all individuals, can be shown to be using the same rule system and thus to exhibit the same patterns in their production. In the context of SLA, on a less general level, within a group of learners sharing the same first language (here English), one could envisage the possibility of subgroups each with its own system, which differs from the others. Such differences could be attributed to factors such as teaching method or learning environment. On the narrowest level, it is possible to envisage a situation where each individual has his own idiosyncratic system to which he can be shown to adhere, but which differs from that of every other learner (refer to Implicational Analyses, namely Tables 6.18 and 6.19.) As implied before, research to date indicates this not to be the case in SLA. Since the purpose of SLA studies and studies of human learning in general is to establish the existence of common strategies and processes, random performance or non-random but idiosyncratic performance

would mean that no generalizations could be drawn from the system of one learner about the systems of others and therefore any purpose and importance in studying and understanding the system will not exist.

The systematicity underlying the learners' production can only be tested indirectly through the specific hypotheses stated in Chapters 5 and 6, each of which proposes variability as well as systematicity which constrain the learners' variable performance of SL.

Implicational Analysis (see Sections 3.3.3. and 6.4.2.5.) is an important technique which enables the analysis of variable production and the representation of the patterns which underlie the variability. In other words, it should be considered as the most convenient way of depicting different types of IL continua ranging from the remotest (or Scale Type 0) to the closest to the TL norm. As such it is clearly a crucial tool in the study of the possible systematicity of variable IL.

The highly significant scales obtained using both the Guttman scaling technique (for both structures), and the more sensitive multi-valued scaling (for negation data), indicate a high degree of conformance to a pattern among the learners. Despite the slight differences in ordering obtained for interrogation data due to tasks differences, it is possible to define a clear implicational hierarchy for the subjects on each investigated area (refer to Figures 6.9., 6.10., 6.13., and 6.14. and Tables 6.18. and 6.19.).

#### 7.1.2. The IL Continuum and the Universality of Language Acquisition Processes

Most SLA writers and researchers are of the opinion that the cognitive mechanisms for linguistic processing are universal and innate. The rationale for universal grammar lies in what is known as "the poverty of the stimulus" (Ellis, 1986: 194). That is the learner cannot possibly arrive at a grammar of the TL on the basis of input data alone. Corder (1967) believes that these

internal mechanisms enable a learner to construct the grammar of the language he/she is learning. Dulay and Burt have argued about the 'creative construction process' again and again in their writing, and have shown empirical evidence for the universality of such a process. Thus Klein (1986: 108) writes about "certain general principles that have little to do with any specific language". White (1985: 29), argues that the SL input data alone are not sufficiently rich or precise to allow the SL learner to work out the complex properties of the TL unless one assumes the availability of certain innate principles (i.e. Universal Grammar). A similar view is also expressed by Cook (1985).

Gass (1984: 125) identifies SL universals as:

"those linguistic elements which are common to all languages (in the form of either absolute or statistical universals)".

The absolute linguistic elements consist of the set of universals which are true to all languages, while the latter consist of those universals which are true to most languages. Wode (1981), on the other hand, has referred to the mental process as "lingua-cognitive mechanisms" since they are probably a sub-class of the general cognitive abilities of man specific to linguistic processing. In another paper, Wode (1984) argues that there is a regular progression from less to complex structure in the development of the learners' ILs. Some of the developmental structures cannot be related to the structure of the TL in any direct way. He suggests that these peculiarities result from universal constraints governing the possible form of natural human languages.

The relationship between universals and IL is one that has been established empirically, e.g. Gass (1979) with data from relative clauses, and War (1984) with data from negation and Interrogation. These studies as well as Wode's (1984) observation above, suggest the validity of Adjemian's (1976) claim that ILs are natural languages (refer to Section 3.1.5.).

We will attempt to support the view that universal acquisitional processes guide basic sentence construction from the data of negation and interrogation.

1. Our data reveals that learners generally follow a pattern of hierarchy in terms of accuracy of negative and interrogative production. This is a strong indication that there is a universality (systematicity) among learners in acquiring syntactic structures.
2. It is interesting to tie up our speculations with Wode's (1984) ideas (discussed above) about structures that cannot be related to the TL norm in any direct way. For instance, in their attempt to acquire the Arabic negator /lan/, learners used /la  $\left\{ \begin{smallmatrix} \text{sawfa} \\ \text{sa-} \end{smallmatrix} \right\}$  / or /lan  $\left\{ \begin{smallmatrix} \text{sawfa} \\ \text{sa-} \end{smallmatrix} \right\}$  /. As stated before, the alternative future negator is /sawfa la/. To put it differently, the above mentioned examples can only be related to Arabic indirectly. Learners of Arabic learn that the Arabic negative particle is preverbal, therefore it should be at the beginning of the sentence. Hence, the data confirms theoretical assumptions that word order is acquired quite early since it is one of the most salient in the input data (Corder 1977a: 85). This also supports Slobin's (1973) principle regarding word order (i.e. pay attention to word order). As mentioned earlier (Section 3.3.6.2.), Slobin (ibid) has discussed universal and 'natural semantactic processes' to account for the recurrent types of semantic-syntactic process in disparate contexts and the dynamic nature of the competence of language users. Traugott (1977) also points out the possibility of a universal semantax: the cognitive processes of production, specifically those involving expression of semantic and semantically related syntactic processes.
3. Point (2) above indicates that the influence of the L1 in construction syntax in the SL is minimal. In other words, the syntax of an SL is acquired in its own terms and not those of the L1, since word order of the SL guides the



acquisition of the SL, (see also Section 7.2.2. below). If restructuring had taken place, when learning the Arabic negator /lan/, then the placement of the negative element in learners' IL should have been /sawfa la:/ (a literal translation of the English structure will not). As stated before /sawfa la:/ is the alternative negative future of /lan/. NL (here English) was not the basis of the production of Arabic negative sentences.

4. Another point to observe in the data on negation is that the negator used is the 'universal' negator of a particular language in the early stages /la:/ which is equivalent to the English no and not. /la:/ was placed before the negated verb (in verbal sentences) or noun (in equational sentences), (see Section 6.5.2.). Omar (1973) in a cross-sectional study, as well as Samdi (1979) in a longitudinal study found the negator /la:/ (in Egyptian and Jordinian dialects respectively), the first to be acquired.
5. It has been mentioned (Point 2 above), that learners used /lan {sawfa / sa-} / in the process of acquiring the Arabic negator /lan/. This seems to indicate that the 'built-in syllabus' (Corder 1967) which is based on universal cognitive processes overrides the influence of teaching for syntactic processing, since no such structures are found in Arabic.

In Section (6.5.2.), we identified 'stages' of acquisition for negation data. Taught (but not probably analyzed or internalized correctly), elements only complicate the identification of the universal stages. A lot of discussion is documented about negation in English with unanalyzed do. The claim is that sentences like \* I am did not going home (War 1984: 276), is the result of the introduction of did before learners have naturally acquired do as an auxiliary. (A similar argument is in Felix 1980). If such a view is correct, then it is also possible that the introduction of /lan/, /lam/ and /laysa/ before the learners have analyzed the function of Arabic negative particle not only



as a negative morpheme, but also as a tense marker, results in the wrong conception that /la:/ is a negator for all types of sentences: verbal (with past or future tense) and equational (see Section 6.5.2. for examples).

The above observations reiterate the view that syntactic processing is more likely to be guided by the universal processes of acquisition.<sup>1</sup> The data also confirms Corder's (1971: 27) observation that:

"the learner is pre-programmed to process the input in a particular way [...], some data is presented prematurely so that it cannot form part of the intake".

White (1984: 52) argues that at all stages of the SL process, the SL learner is trying to come to terms with the SL data and to construct a grammar to account for that data. Bialystok (1982) also argues that learners learn more or less what they are taught. In other words, there is no necessary connection between what is taught (i.e. the input), and what is learned (the intake).

All the previous argument supports our results and makes our claims and generalizations stronger. Since even if the data are drawn from different institutions where teaching materials and methods may vary, this does not seem to influence the 'universal' /'pre-programmed' learning process.

#### 7.1.3. The IL Developmental Continuum

This section is related to hypothesis 1.1. (Section 5.1.) regarding the placement of learners along the developmental continuum. In conducting a cross-sectional study, we hypothesized that the sample population from higher levels are representative of lower level learners as they progress in learning and move on to higher levels. For example, Level 5 is representative

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1. In first language acquisition, Chomsky (1975, 1980a, 1981) argues that this universal process/grammar consists in the main, of principles limiting the ways in which the child can conceive of language, or rather of a grammar since the latter is the primitive notion in the theory (refer to Section 2.1.).

of all lower levels when they will reach Level 5; Level 4 is representative of Level 2 two years from now. Since there is supposed to be some progress in learning, the higher levels are hypothesized to perform better than the lower levels.

Our Hypothesis (1.1.), is borne out by the ANOVA results with 'Level/Time' as the factor (Section 6.2.2.1.) which show significant differences between the 5 levels. Results from the Scheffé-tests (Section 6.2.2.2. ), also support the ANOVA tests. Again, the means of performance scores of each group (Section 6.2.1.) show better performances by higher levels.

In all the above analyses, Tables and Figures (Section 6.2.), there is a consistent pattern in the position of each learners' group on the continuum: the lowest, Level 1 group is always at the lowest level, Levels 4 and 5 are at the top, while the other groups are in between the lowest and the highest points.

A detailed analysis of the position of each individual learner can be ascertained from the manually constructed implicational scales for Negation (Tables 6.18 and 6.19). Again, most of the Levels 5 and 4 learners are at the top of the scales in the above mentioned tables.

Thus, as far as development due to time is concerned, it has been shown, without exception that there is a significant effect of Level/Time (in both tasks as well as on both structures), which indicated that significant language development takes over the 5 Levels of proficiency sampled in this study.

#### 7.1.4. The IL Continuum of Increasing Complexity

The key concept in this Section is IL continuum of development (Section 7.1.3.). By developmental continuum, it is implied the increasing frequency of the introduction of new linguistic forms or the gradual change of the probability of use of particular forms. It was observed in the previous Chapter that the acquisition of new forms may be conditioned by the linguistic environment (i.e. Structure) as well as by Task, and that Time

(i.e. Level) was found to be a significant determinant of variability. In including Time, Structure and Task as parameters of variability, we were in fact introducing a multidimensional model of variability. Nonetheless, using the results from the implicational scales which were used to determine accuracy/acquisition orders, a developmental continuum has been constructed for the acquisition of negation and interrogation (Section 6.4.2.5. and 6.4.3.7.).

In this study, the overall results, then, show that there are developmental patterns observed cross-sectionally. The movement follows the patterns of increasing complexity. As mentioned before (Section 7.1.2.), the starting point of learners is from a basic universal semantax and not a developed L1 system in the acquisition of SL.

It has been generally recognized by theorists (Corder 1977a, 1977b and others, See Zobl 1984b for review), that the early stages of SLA show certain characteristics of simple codes, such as a simple or non-existent morphological system, a simple pronoun system, lack of function words like prepositions, a fixed word order which express syntactic relations and a poor lexicon. As a learner progresses along the continuum of learning he gains more ground by complexifying the basic code at his disposal.

Miesel et al. (1981) on the other hand, argue that there is absolutely no reason to believe that an SL learner, especially in a natural setting, should always start with the 'easy' parts of the grammar and leave the 'most' difficult ones for later. Rather, he uses whatever is necessary to express his communicative needs, possibly choosing the least difficult of several alternatives (p. 113). Therefore a structure which shows a high risk for errors may be acquired fairly early and continue to be used deviantly until very late. This view, however, remains an open question as long as linguistics and psychologists have great difficulty in explaining what 'simple' is (Refer to Section 3.3.6.).

Data from the syntactic structures of negation and interrogation will be taken to illustrate the increasing complexity of the IL continuum.

Complexification involves the substitution of general by more specific rules when conditions of appropriateness become evident. The General: Specific distinction in negation is exemplified by the overgeneralization of some Negative variants. To put it differently, some Negative variants are generally applicable forms in contexts which would require other negators. From the analyses in Chapter 6 (Section 6.5.), it was found that /la:/ was the most overgeneralized negator. The use of one Negative variant for another indicates the general rules of negation for some learners, e.g. '/la:/ to negate sentences'.

Increasing complexity of the IL continuum may result from increasing degrees of analysis of linguistic knowledge. For example, it has been observed that the Arabic negative particles are used as unanalyzed negative variants at early stages of development. This indicates undifferentiation of the negative particles as tense markers. As semantic complexity increases both in comprehension and production, Arabic negative particles reanalyzed as:

Type of Sentence + Negative Particle + Tense to realize:

Verbal Sentences Negation	/la:/ (Present)
	/lam/ (Past)
	/lan/ (Future)
Equational Sentences Negation	/laysa/

Thinking about the structure of these negative particles and of the initial pattern evident in our results for the ordering of the four particles, it is possible to suggest a tentative explanation for the initial favouring of /la:/ over the other particles for the correct and appropriate use of that means of negation. Basically, to produce categorical realization of Arabic negation, various aspects of acquisition are interacted, e.g. word order development, tense development, negation development and inflection development. By negation development, we mean the

realization of the correct form of the negative particle (for sentence type) and its placement in the appropriate position in relation to the verb which involves word order development. Tense development indicates the development in the learners' language of Arabic negative system which enables the realization of negative particles as tense carriers. By inflection development, we mean the development in the learners' language of Arabic inflection system which enables the expression of number, gender, person and tense.

Therefore it is apparent that the negative is formed correctly first in /la:/ cases where the tense of the verb is not to be changed. /lam/ was the next favoured negative particle. A careful examination of the implicational scales (Tables 6.18A and B) reveals only four learners categorically realized /la:/ but not /lam/ on the Translation Task. On the other hand /la:/ and /lam/ were the most favoured particles on the Manipulation Task (Tables 6.19A and B). /lam/ was less favoured than /la:/. Learners who used /lam/ as only a negative particle did not change the tense of the verb which was inflected for past tense in positive statements, thus, marking the past tense twice. /lan/ and /laysa/ were more problematic, since the tense of the verb should be changed for the former, while the latter should be inflected for number and gender. In essence, to form correct /lan/, /lam/ and /laysa/ negation, the learners need some new knowledge, whereas to form a correct /la:/ negation, no new learning of linguistic rules was required.

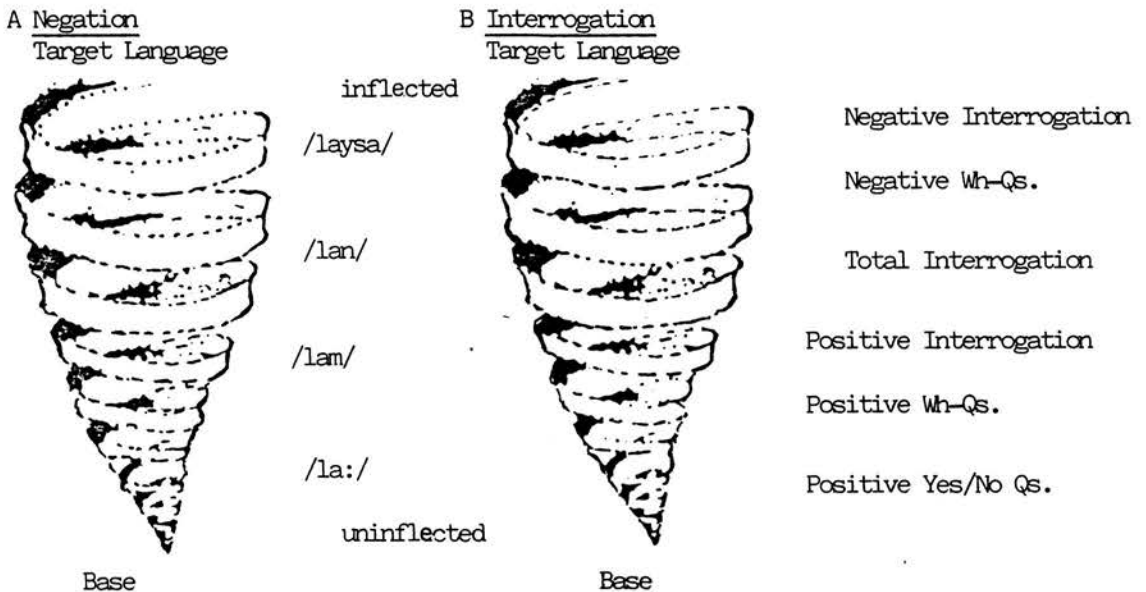
Another indication of complexity is 'inflection'. Omar (1973) reported that inflections were the last to be fully acquired and the order of acquisition was found to be determined by their regularity and essentiality of convergence of meaning. It is assumed that a general uninflected main verb (or adjective) is the all-purpose tool.

The Guttman Scales (Tables 6.18., 6.19., and Figures 6.9., 6.10A. and B., 6.13., and 6.14A. and B.) show the sequences of development of negation and interrogation. The analyses also show the

structural poverty of the negative and interrogative structures in lower stages since these stages have no inflection at all, therefore inflections for number, tense, person and gender are not indicated anywhere in the sentence. Increase in complexity means the gradual acquisition of Arabic negation and interrogation systems as well as the gradual acquisition of inflected forms of verbs, nouns etc. It also involves knowledge of the underlying grammatical categories and their relationships.

The continua of negation and interrogation obtained in implicational scales (Chapter 6) are schematically displayed as:

Figure 7.1. The IL Continua of Increasing Complexity



As for the interrogation data the use of declarative sentences in interrogative structures (Yes/No Qs.) also show undifferentiation between the two sentence types. This is in keeping with the belief that declarative sentences are the easiest sentence type (Brody 1984). It is reasonable to assume that our subjects have overgeneralized declarative word order. On the basis of a comparison with data from English (L1 and L2) and Arabic (L1) (Chapter 2), one might claim that this aspect of ASL is based on an operating principle such as that proposed by Slobin (1973) (Section 3.3.6.) to avoid the rearrangement of linguistic units. Similar findings are also well-documented from learners of French L1 and L2 (Lightbown and d'Anglejan, 1985: 416).

The negative interrogation was found to be the least favoured type of interrogative variants. This is in accord with the findings that Negation is more difficult than Interrogation.

In the above Figure (7.1.), the scale of complexity of the negation system in Arabic expands to the maximum at /laysa/ negative particle as undifferentiated categories (starting at the uninflected forms of verbs, adjectives etc), become more specific as functions, relations and morphological distinctions became more transparent to learners. Since the scale is implicational, it implies that those subjects who have reached up to /laysa/ have also differentiated, acquired and used all the other categories below (Base - /lan/). The majority of students who have reached up the scale of complexity and have elaborated their negation system are only those from Levels 4 and 5. (Refer to Figure 7.3. below for examples of learners).

The implicational analysis (Chapter 6) and the schematic representation above have illustrated that the IL continuum is one that is developmental and one that is expanding in complexity from a basic 'semantax'. Since it is goal-oriented, the increase in complexity is necessary to bring the basic, simple codes of learners to closer approximation with the TL. Many concepts are involved in learning and in the notion of increasing complexity; some of these are presented below:

	From	To
1. Rules	General	Specific
2. Semantic and formal categories	Undifferentiation	Differentiation
3. Analysis	Unanalyzed	Analyzed
4. Inflection	Absence	Presence
5. Markedness	Unmarked	Marked
6. Word Order	Fixed	Flexible
7. Relationship between linguistic elements	Opaque	Transparent

(Adapted from War 1984: 317)



## 7.2. THE EFFECT OF TASK ON IL PERFORMANCE

### 7.2.0. Introduction

In this Section, we are going to examine the Group Two hypotheses which hypothesize that: Learners move up and down the IL continuum depending on the degree of formality in their style.

We have compared the performances of the learners in two different tasks (Section 6.3.). The means of performance scores (Tables 6.1. and 6.2. and Figures 6.2. and 6.3.) indicate a fairly constant range for Levels 4 and 5, but a high variability for the first 3 Levels. This is because of the great improvement of the beginners and intermediate Levels from Translation to Manipulation. The bulk of the data, then, support the views that differences in tasks influence markedly variable performances in the first 3 Levels (Section 6.3.4. in particular Table 6.8. and Figure 6.5.). It would seem therefore that the IL systems of these groups (i.e. Level 1-3) are less stable because they are permeable to the level of difficulty of different tasks. In other words, for Level 1-3 groups, performance scores are conditioned by factors like time, access and reference to learned rules, monitoring by rule or by feel, the nature of the task (i.e. production or recognition) and other such factors. In contrast, Levels 4 and 5 groups show greater stability across tasks because they have more or less categorically acquired the syntactic rules for negation and interrogation.

### 7.2.1. Movements Along the IL Continuum as a Function of Task Differences: Discussion and Interpretation

Our discussion here, concerns the movement of learners down the scale of complexity of the IL continuum because of task differences. For instance "a grammatical structure [...] which may be produced at 90% criterion on one task, may be produced at only 50% criterion on another task at the same point in time" (Tarone 1984: 31).

In Chapter 6, the analyses attest the hypotheses that learners' IL systems are unstable - that learners may appear to acquire a particular form or structure in one situation (identified here

as task), but not in another situation. Thus, there exists variability with respect to elicitation tasks. This variability turned out to be highly systematic (Section 6.3.). Variability in IL is not unexpected, considering that many forms or structures are still being learned. Hypothesis testing by the learners and the possibility of multiple hypotheses show that different variants of the same form/structure may be present at any one point of time (Section 6.5.2.). The reasons for variable performances by learners have been discussed in Chapter 3, here the discussions will be restricted to the following observations: 1) variable performances by a particular learner reflects an IL system of variable rules, since the IL system of a learner is still being formed; 2) The fluctuations of the IL system is also conditioned by the nature of the tasks defined by a set of features. Variability therefore is accounted for, i.e. it is not the product of random and chaotic application of rules.

The discussions above (Section 3.2.), and the factors shown to play a part in task variability in previous studies, (Bialystok, 1982, Krashen, 1981 and Tarone 1983) provide the basis for task descriptions in terms of features given below.

<u>Translation</u>	<u>Manipulation</u>
+ Production of an entire sentence	+ Recognition/Correction of part/full of a given sentence
+ Written	+ Written
+ Focus on Communication	+ Focus on form
+ Automatic	- Automatic

There is a considerable current debate about how the facets of learner's transitional/variable competence relate to each other (Tarone, 1983, 1984). However, the work of Krashen, Bialystok and Tarone (Section 3.2.) will be used to show that the different tasks impose different cognitive, linguistic, situational and temporal demands on the learners.

The 'difficulty' of a task is based on whether it is a production or recognition/correction task. Thus an error correction task will require more from the learner than merely saying that a sen-

tence is right or wrong. It is a task which can operate both an implicit as well as explicit knowledge (D'Angeljan 1979), therefore it is not necessary that one should have an analyzed knowledge of forms or structures to be successful in a recognition/correction task. Task difficulty is also defined by whether the production is from a given sentence (Manipulation task) or from the learners' own systems (Translation task). The latter is more difficult because the learner has to decode the sentence from the mother tongue and encode its (supposed) equivalent in SL entirely from his own IL system, which, by definition, is still an imperfect system. Encoding a sentence entails knowledge of the complex syntactic structure and requires the right inflection of given verbs, adjectives or nouns within a given sentence. On the sentential level the learner must understand the context given in the sentence in order to provide the right negative/interrogative particles.

According to Bialystok (1982), relative success in the tasks will depend on the learners competence on both the analyzed and automatic factors. This model is built upon the notion that acquisition is a process characterized by two factors: the analyzed knowledge factor and the automatic knowledge factor. Linguistic tasks can be marked or unmarked on either one or two factors, thus yielding a 4-matrix cell. Beginners are believed to start in the cell unmarked on both factors from which they proceed into other cells, first those which are marked on one factor only and with increasing proficiency eventually into the cell marked on both factors (Section 3.2.2.).

Within Bialystok's framework, the learner must have analyzed knowledge of the structure and properties of the SL. We have seen earlier that the learners do not have analyzed knowledge of the structure of Arabic negative as tense carriers, but rather they are considered only as negative markers. In the error correction task, there is already a ready made sentence which have to be corrected, thus this task is less difficult than the Translation task.

Task difficulty also depends on whether the production is spontaneous or delayed. Spontaneity in tasks (whether oral/written) requires relative automatic access to linguistic knowledge. The situations are such that they do not allow for monitoring or consultations of the conscious grammar. There is some amount of monitoring in the Manipulation task as opposed to the Translation task which does not favour monitoring. This can be seen in the distribution of subjects (Tables 6.6.A and B), where learners score better in the Manipulation than the Translation. Thus the lack of time to encode a correct sentence, and the focus on communication rather than on a single form make the Translation task more difficult than the Manipulation task.

One may therefore define the Translation task as activating the implicit knowledge system of the learner, while the Manipulation task as activating the explicit as well as implicit knowledge systems of the learner. One then might interpret the moving down of the former task (Translation) as a sign that the learner brings intuition to a language he does not yet know explicitly. In other words, if the learner in his attempts to solve linguistic tasks cannot fall back on some monitored, analyzed, explicit (or whatever one wants to call it) knowledge, he has to make use of his intuition which according to studies is there from the beginning (see for example Gass 1983, Thiele 1983). This intuition is gradually replaced by other knowledge, which can then be used and applied in more and more structures and tasks.

The implication of this is twofold. Firstly, it strongly supports the claim made by Corder (1967) that there is some sort of built-in mechanism available to each learner which governs the acquisition process at early stages as long as no other sources exist (see 7.1.2. above). Secondly, it stresses the importance of a monitoring mechanism which apparently is necessary to systematize the acquisition process. As mentioned above, this is demonstrated by the fact that the Manipulation task was more favoured than the Translation task.

Task difficulty also depends on the feature: focus on form vs.

focus on communication as another dimension of task variability. Any task that has the feature 'focus on communication' is more demanding for it entails (a) fluency and automatic access (if oral), and (b) the ability to encode meaningful sentences and knowledge of syntactic, morphological and discourse rules. In terms of Tarone's model (Section 3.2.4.), Manipulation (i.e. Recognition/Correction) seems to function as a formal style, whereas Translation approaches the vernacular. In other words, the more formal the situation is, the monitoring may take place and therefore the better the performance will be. And to bring the matter nearer to home, the more formal the situation is, the higher the learner is expected to be placed on the continuum.

Finally, as for the stages of development, the results (Section 6.4.2.5. and 6.4.3.7.) show differences depending on the data set (or task) based to establish the stages in Interrogation, and Negation. It seems, that task differences are also conditioned by the structures and categories under study. This contradicts with AL-Junmally (1982) who claims that while different elicitation tasks may produce different levels of performance in the learner, they do not alter the patterns which underlie that performance in terms of environmental or other constraints (see also Sections 6.4.3.7. and 6.6.).

#### 7.2.2. Variability by Task with Reference to Strategies, Processes, and Error Types

Section (6.3.) dealing with the analysis of the data has shown empirically that differences based on quantified performance scores exist between the two tasks. In this section, we will attempt to discuss some very important issues in IL using the notion mentioned earlier (Chapters 2 and 3). We will argue that the strategies/processes used to solve the tasks are different depending on the task's degree of formality. This can be tested through the error types and IL rules used by the subjects in both tasks.

However, before going any further, it is worthwhile discussing notions such as strategies/processes.

### Strategies/Processes

The sub-heading in this section is indicative of relationships that hold between strategies and processes in language acquisition. There is no clear consensus on the differences between strategies and processes. Thus while Selinker (1972) lists transfer, strategies of learning, strategies of communication as some of the five mental processes (Section 3.1), others differentiate between the two terms. Blum and Levenston, (1978: 125), for example, define strategy as "the way the learner arrives at a certain usage at a specific point in time". A strategy is defined by Brown (1980: 83) as:

"a particular method of approaching a problem or task, a mode of operation for achieving a particular end, a planned design for controlling and manipulating certain information".

Tarone et al. (1976: 99-100) see learning strategy as a process of rule formation:

"a learning strategy is a tentative hypothesis which the learner forms about the nature of the L2, which is tested and subsequently modified".

In Corder's (1978) view a learning strategy is a regular characteristic of a learner's IL at the time of study, it is also the result of his IL system.

On the other hand, a process is defined as "the systematic series of steps by which the learner arrives at the same usage over time" (Blum and Levenstone 1978: 125). If this definition is accepted, then the question of processes in a cross-sectional study does not arise. Bialystok (1978) distinguishes process from strategies by the criteria "obligatory/optional", process being obligatory, strategies optional mental activities. However, as Faerch and Kasper (1983a) have pointed out "strategies may indicate processes of interlanguage formation", therefore strategies should be a field of investigation if we are to understand the language acquisition process.

In the literature there are considerable disagreements as to whether strategies should be considered a particular type of psycholinguistic process (Selinker 1972), a particular type of

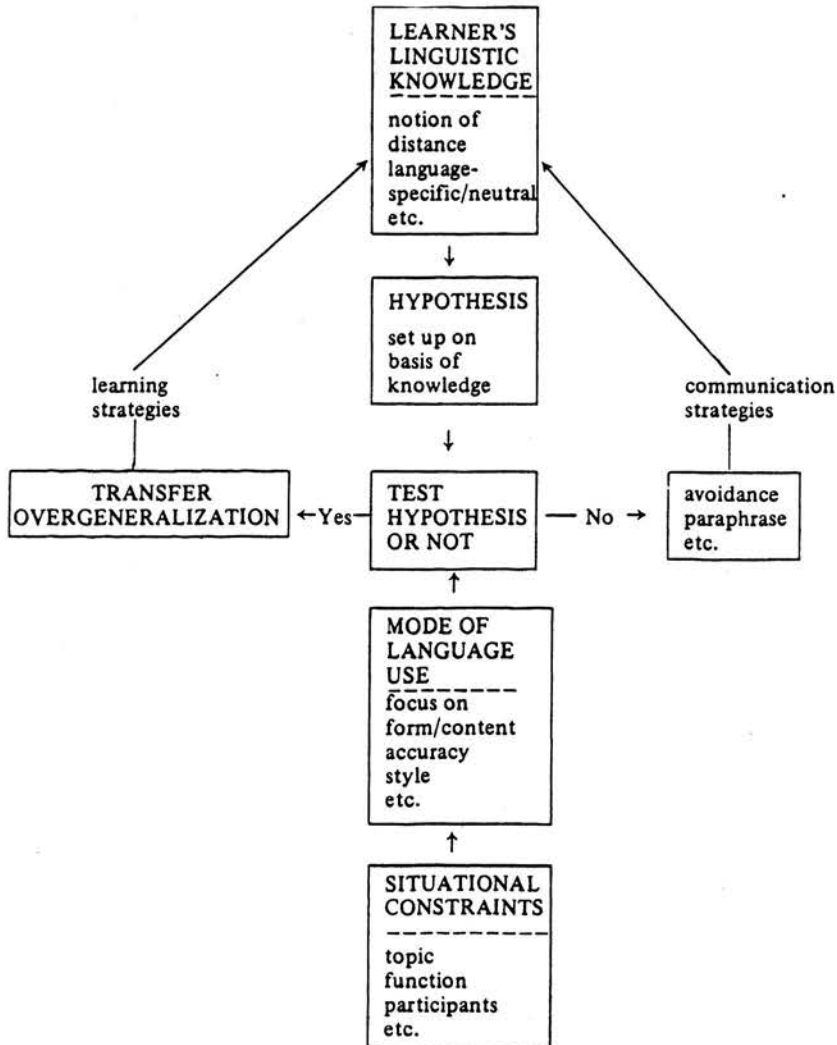


psycholinguistic planning (Faerch and Kasper 1983c) or a particular type of interactional process (Tarone 1981) (for a discussion see Faerch and Kasper, 1984). Selinker (1972) confesses that "a variable definition of it (i.e. strategy) does not seem possible at present" (p.219).

Generally speaking, strategies are seen to be related to problem-solving in learning or communication. Problematicity is a widely used criterion (Brown 1980; Corder, 1977; Faerch and Kasper, 1983b; Jordens, 1977; and Kellerman, 1977). Strategies are used when there are gaps (in lexicons, in syntactic and morphological rules etc.) in the linguistic knowledge of the learner. To overcome this, learners have two approaches:<sup>2</sup> first, to learn by memorizing, by doing classroom exercises, by listening and trying to understand sentences in discourse, by recourse to grammar books and dictionaries etc. The second approach is to make use of what one has faced with communicative necessity or by avoidance, circumlocution, message adjustment and such other strategies. (See Tarone, 1977 and Corder 1978a for discussions of the communication strategies). It is also claimed that the strategies a learner employs depend on both: (a) such factors as the learner's notion of the distance between NL and TL; and (b) the notion of what language specific or neutral, general linguistic knowledge and knowledge of TL and situational constraints are (James 1981).

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2. This is in accord with Faerch and Kasper's (1986) views, who believe that the learner has 2 types of SL knowledge: a) declarative knowledge: 'knowing that', it consists of internalised SL rules and memorized chunks of language;; b) procedural knowledge: 'knowing how', it consists of the strategies and procedures employed by the learner to possess SL data for acquisition and use (Cited by Ellis 1986: 164)



Figure 7.2: Learning and Communication Strategies

(Source James 1981: 235)

The above Figure (7.2.) shows the differences between learning strategies and communication strategies. When investigating variability in strategy use, it has been observed that different learners approach the learning and the communicating tasks differently. However, it may be possible to see group trends which may result from the same type of learning situations and linguistic experiences. War (1984: 251), for instance, found that there are some strategies (and resultant error-types) which are common to her two investigated groups (i.e. Non English Medium and English Medium of instructions), but some which are more traceable to the NEM classrooms.

It has been also observed that the proficiency level of the learner may influence strategy use. Low-proficiency learners, for example, tend to use more L1 based strategies than high-proficiency learners. Some studies that support this finding are Bialystok (1983); Okanlawon (1984); Tarone (1977) and Taylor (1975).

Here we will comment on some of the strategies observed in this study.

A. Overgeneralization (i.e. the extension of SL rules to inapplicable contexts)

One strategy used by learners is the overgeneralization of the present negative particle /la:/ to indicate all kinds of negations. Another type of 'error' is the overgeneralization of a future tense in the main verbs of negative sentences when using /lan/ negative particle, hence marking the future tense twice (see Section 6.5.2. for examples). This type of error could also be described as the strategy of hypercorrection. Examples given in Section (6.5.2.) are indicative of this kind of strategy in which the rules are taught but not fully grasped. In other words, the double future tense marking suggests the learner's concern to 'make sure' that future tense should be marked. However, since he was probably uncertain about the fact that /lan/ is a tense marker, he adopted the above strategy. Obviously, it is very difficult to make a very clear cut between the two above mentioned strategies, at least in our case. Since both strategies may be applicable in explaining the above error type (i.e. marking the tense twice).

B. Transfer (i.e. the use of L1 rules instead of L2 rules)

The thinking of SL researchers about transfer has changed drastically over the last few years. Transfer was regarded as all pervasive. The evidence was derived from foreign language teaching (See such classics as Fries 1945, Lado, 1957, refer also to Section 2.2.1.). Then Dulay and Burt (1972, '73 and other studies, refer to Section 2.2.2.2.), claimed that

transfer was non-existent or at best unimportant in SLA.

Transfer is a very controversial area. However, it seems to us that the truth lies between these two extremes. Transfer does not have the exaggerated power which claims that:

"what the student has to learn equals the sum of the differences (between the 2 languages) established by the Contrastive Analysis" (Banathy et al. 1966: 37).

At the same time, to deny the possible insights of the predictions and explanations of transfer is to dispute a fact which has been recognized by foreign language teachers and learners everywhere.

Recently, there has been a revival of interest in language transfer and there have been a number of attempts to explain the circumstances in which it is likely to occur. Many SL researchers argue that transfer is an integral part of how SLs are acquired. For instance, to Wode (1977b) L1 influence is not interference (negative transfer), but the process of overgeneralization of rules from the known L1 to the new L2, since, in his study, some of the German regularities relating to the positioning of the Negation "were apparently carried over to English".

Gass (1984: 129) found that "transfer interacts with language universals". Her conclusion is that:

"language universals serve as an overall guiding principles in second language acquisition, interacting with the native language and the target language systems, at times resulting in violations of a proposed universal, at times being consistent with a given universal" (Gass, *ibid*).

Similar views are also expressed in White (1984: 43) who writes:

"It has been recognized that transfer is not incompatible with universals - oriented explanations of L2 acquisition".

According to Littlewood (1984b) transfer and overgeneralization are not distinct processes, on the contrary, "they represent

aspects of the same underlying learning strategy" (p. 25). He believes that both result from the fact that the learner uses what he already knows about language in order to make sense of new experience. In the case of transfer, the learner uses his NL as a means of organizing the SL data. While in the case of over-generalization, it is his previous knowledge of the SL that the learner uses (Littlewood, *ibid*).

Corder's (1978b) warning is in order here. He observes that one needs not only to acknowledge multiple linguistic influences on SLA, such as the influence of the L1, of other languages known to the learner and of universal factors, but also to provide a theoretical base that accounts for all these influences and their variability. Such a solely theoretical base has not yet been discovered (see Section 3.4.). Many recent theories however assume that the SL learner constructs a series of IL grammars which are systems in their own right, and are natural languages (A'Djemian 1977). IL as a natural language may be expected to obey the constraints of language universals and to be susceptible of modelling by means of grammar. IL is also conceived of as a "separate linguistic system" (Selinker 1972) with its own unique syntactic, morphological and phonological regularities.

The following examples which illustrate transfer from English into Arabic have been mentioned earlier in our discussion of the results:

(1) Five students (Learners 7, 15, 40, 50 and 53) translated the structure (be + going + to) word for word from English. Thus the structure is not going to in Sentence (2) 'It is not going to rain next week' was not translated as being equivalent to 'will', but as an equivalent to the verb go.

/hawah la sawfa ya~~x~~ hab yum~~t~~er .. /(Sub No. 50)  
he not (present) will go rain (See also Section 6.5.2: point 3A)

(2) Many learners translated the pronoun separately while it should be marked within the verb (Section 4.2.8.). The above example (Sentence 2 translated by learner 50) illustrates this

finding. More examples are found in Section 6.5.2. under 4C).

(3) Learners used English lexicons in place of Arabic vocabulary. Tarone (1981: 62) identifies such a strategy as "language switch", i.e. the learner uses the NL term without bothering to translate. This strategy however was not very frequent. Learner 12, in copying the English vocabulary transliterated the English lexicon /fotbu:l/ rather than using the Arabic /kurat alqadam/.

The above findings lead us to believe that:

(i) the subjects are aware of the 'language distance' (Corder 1978b; Kellerman 1977), that is they 'feel' that English structures are not translatable word for word into Arabic due to the diversity between the two languages. Thus, only five subjects translated the structure mentioned in Point (1) above word for word (i.e. used literal translation).

(ii) Transfer at least in the case of our subjects, is more a strategy of communication than one of learning, since the subjects only resort to it when they are forced to produce in the TL structures that have not been internalized by them. (Point (1) above is only observed in the Translation task, while Point (2) is observed on both tasks). This is a case where the communicative pressure is beyond the learner's knowledge in the SL, i.e. the learner is required to perform beyond his explicit knowledge.

(iii) What is happening in Point (3) could better be coined as 'borrowing' (Corder 1981a). Language-borrowing occurs when learners transport a native word or expression untranslated into the IL system. The learners' avoidance could be explained through their awareness of the greatness of the language distance which will eventually lead them to discover the relative unborrowability of much of their NL.

#### C. Paraphrase

Another strategy which was observed in the Translation task is

circumlocution or paraphrasing, that is a description of the desired lexical item or a definition of it in other words. For instance /ba:?' alḥalyb/ (literarily, seller of the milk, i.e. the milkman), was translated into /rajuḷ alḥalyb/ (man of the milk), into /ḥama:l alḥalyb/ (carrier of the milk) and tajer ḥalyb / (merchant milk) by Learners 55, 56 and 31 respectively. Other examples of paraphrasing are: 1) the translation of You cannot write on the wall into /mamno' taktub 'la: jeda:r/ (forbid write on wall) (Subject No. 13); and (2) the translation of How did Marriam receive the letter, into /fi ayy šakl tasalamat marriam Xita:b/ (in what kind received Marriam letter) (Subject No. 4) (see also 5.5.3.). As can be seen from the above examples, the respondent's concern is to communicate the message. Thus, when a lexicon/structure was not readily available/was not retrieved (if known) quickly enough, the message was communicated by using circumlocution.

The data above is also an indication that learners use inferencing as a strategy for language learning (Bialystok, 1983). The strategy describes one aspect of the creative process of language learning which may be recruited when the actual expressions or meanings are not known, attempts are made to generate or understand language data on the basis of language (target, native and others) and of the situation. The process may also be called 'informed guessing' or 'hypothesis testing', in that an attempt is made to try out a possible solution to a linguistic problem (refer to Section 3.2.2.).

Word Coinage strategy was also used. Some learners (e.g. Nos. 14, 54, Section 5.5.3. under BIV) made up new words in order to communicate desired concepts.

#### D. Slot-Insertion

Though the possibility of such a strategy has not been discussed much in the literature, it has been observed that for the syntax of negation and interrogation, there is a strategy of inserting (either in the middle or finally) a

negator or a question marker in the declarative affirmative sentence. For marking the negative intention, a negator - /la:/, /lam/ or /ma:/, /lan/, /laysa/ - is inserted in the declarative sentence.

e.g. /qitaṭ la: takul attamer/  
 cats not (present) eat dates  
 (Sub. No. 14; Sent. 43)  
 (Refer to Section 6.5.2. for more examples).

Data from interrogative sentences, also lend support to the strategy of slot-insertion.

e.g. /Marriam talaqat kayfa alrisalah/  
 Marriam received how the letter  
 (Sub No. 24; How Qs. Q.No. 37)  
 (For more examples see Section 5.5.1.)

Slot-insertion strategy, therefore, may be a plausible explanation to account for such sentences as above. Givon (1979b) has discussed the characteristics and uses of the pragmatic and syntactic modes in relation to different linguistic systems (e.g. child language, pidgins, registers etc.). One characteristic which differentiates the two modes is the loose conjunction and parataxis of sentence structuring in the pragmatic mode. The syntactic mode, on the other hand, is tightly structured, as in subordination and embedding of clauses. He has also observed that language acquirers first acquire a communicative system which "exhibits the characteristics of our pragmatic mode" (Givon 1979b: 226). Thus, in the light of these observations it is feasible to posit that loosely conjoined structures like:

Neg (tense) + S

Q (Wh/Yes - No) + S

Where Neg = /la:/, /lam/, /lan/, /laysa/

Yes-No Qs. = /ʔa/, /hal/

Wh-Qs. = which, why, where, when, what, who, how

are indicative of the pragmatic mode of communication. These structures which make use of simple insertion and addition to a sentence are possibly easier than structures which involve syntactic rules like inflection, omission and replacement of some



constitutents in the sentence; e.g. the omission of /sawfa or sa-/ from the verb when adding the negator /lan/.

It has been shown (Chapter 6) that Interrogation was more favoured than Negation, in particular, on the Manipulation Task. Givon's above observation could be used to explain our finding. Learners were correct when prefixing the right interrogative particle, but they were to inflect and (sometimes) omit, some constituents of existing structures (on the Negation task); hence Negation was less favoured than Interrogation.

#### E. Avoidance

Avoidance was observed on both tasks at lower levels of proficiency. However, avoidance strategy was more dominating on the Translation task. The learners at the earlier stages of the IL continuum especially those at Levels 1 and 2, could produce very little Arabic, therefore many of them abandoned full/part of the required sentences. We would like to emphasize here that failure to respond was considered as an error all through the analyses. As mentioned above avoidance is most powerful at Levels 1 and 2, then its use begins to decrease as the subjects move up the continuum and begin to produce more and more target-like structures.

### 7.3. DEVELOPMENTAL STAGES

#### 7.3.0. Introduction

Before dealing with the sequence of development, it is worthwhile discussing some relevant notions. Here, we are not discussing the 'order of acquisition', but rather the relative difficulty of some grammatical sentences of Arabic for SL learners. The term acquisition order must be treated carefully, since the data here only represent cross-sectional cuts. As such they might delete a relative but not necessarily a successive order. Treating such cross-sectional cuts as a successive order was probably the main weakness of the Morpheme Order Acquisition studies (Section 2.2.2.2.).

However, finding sequences of development in learners has been promoted by the belief that universal lingua-cognitive mechanisms are responsible for linguistic/syntactic processing. The hypothesis is that, if there are universals of linguistic acquisition, then the sequences should be similar across variables like the learners' L1s, age, tasks, learning situations etc. (Corder, 1967; Dulay and Burt 1974, etc.). The accepted procedures for tracing developmental sequences are longitudinal and cross-sectional studies, though both methods have their own peculiar strengths and weaknesses (see Meisel *et al.* 1981: 114). In this study, the cross-sectional method has been adopted, since our study investigates group trends rather than individuals.

In tracing the sequences of development for Arabic negation and interrogation, we have to keep in mind that these stages should be seen as overlapping. As mentioned earlier (Section 6.5.), the stages are not linear, discrete stages, but they overlap within each learner's variable performance, e.g. some learners use both /la:/ and /lam/ to negate sentences with present tense. To put it differently, SLA cannot simply be viewed as a system of an increasing number of clearly cut rules. While some new rules are acquired, others are dropped after a certain period of time and some are changed (e.g. adding more specific information to their structural description, thus restricting the range of possible applications which had been the result of overgeneralizations as compared with the target variety). Hence, the process of IL is accumulative rather than clear cut stages.

One may logically assume that all parts of the grammar of a learner develop uniformly, that is, if he progresses in one area of his grammatical competence, there must be similar developments in others. However, this is not to be taken for granted, since for many years SLA research has dealt with fossilization (Selinker, 1972).

#### 7.3.1. Sequences of Development

It has been established (Sections 7.1.3 and 7.1.4) that the IL continuum is a continuum of development with increasing com-

plexity.

In the following sub-sections, we will present the sequences of development for negative and interrogative structures. First we are going to build up the developmental continuum for Negation realization then that for Interrogation, since a sequence of development was found to be well established in each of the areas.

#### 7.3.1.1. Negation

Specific Hypothesis (H 6.7.) proposes that learners' variability in the realization of Negation is constrained by which of the four particles /la:/, /lam/, /lan/, or /laysa/ is indicated in the sentences. In order to be able to reject the null hypothesis it is necessary to establish the existence of significant implicational scales for the negation data. Figures (6.9. and 6.10.) and Tables (6.18. and 6.19.) show that significant scales were obtained on both bimodal scalings and the multi-valued scaling. Therefore, it appears that the null hypothesis can be conclusively rejected. The learners' variability is constrained by these four negative particles. This finding supports the contention of General Hypothesis (3.1.) formulated in Section (5.1.).

Since significant scales exist for the ordering of the four negative particles in terms of the relative realization of negation, an implicational hierarchy can be defined for the Arabic negative variants in accordance with specific Null Hypothesis (H<sub>0</sub>6.8.) which reads as follows:

There is no order of acquisition of negation system in Arabic for learners.

Using the data obtained from the implicational analyses, the following implicational hierarchy is valid /la/ —→ /lam/ —→ /lan/ —→ /laysa/.

Similarly a developmental continuum can be outlined on which the learners can be placed according to the stage they are in, in their development of the four negative particles (Figure 7.3.).

Figure 7.3: Continuum of Development for Syntax of Negation

Stage	Description	Examples of Learners
1	Categorical non-realization of Negation in all four particles	15, 44, 4, 10, 38
2	/la:/ negative particle, variably realized correctly	14, 2, 8, 29, 12
3	Categorical realization of /la:/	55, 36, 23, 6
4	Categorical non-realization of /lam/	10, 13, 45
5	Variable realization of /lam/	45, 46
6	Categorical realization of /lam/	5, 48, 40, 8
7	Categorical non realization of /lan/	55, 36, 14
8	Non-correct realization of /lan/ (a) /la:/ + $\left\{ \begin{array}{l} /sawfa/ \\ /sa-/ \end{array} \right\} + V$ (b) /lan/ + $\left\{ \begin{array}{l} /sawfa/ \\ /sa-/ \end{array} \right\} + V$	32 12, 44
9	Variable realization of /lan/	48, 40, 8
10	Categorical realization of /lan/	16, 23, 47
11	Categorical non-realization of /laysa/	38, 14
12	Variable realization of /laysa/	3, 10, 5, 17
13	Categorical realization of /laysa/	56, 47, 30

\* Data are taken from the Translation Task

\*\* The criterion level for acquisition was 80%

In this continuum, learners at Stage 1 produce no target-like variants whatsoever, i.e. they are still at the basic grammar stage, and the longer they are exposed to the TL the more they approximate the target norm. Subjects at Stage 13 produce target-like negation (with all four negative particles) all the time, hence they have attained target-like mastery of this structure.

Two aspects of the results for the ordering of the four negative particles warrant discussion. First, Tables (6.9., 6.10. and 6.18.) show that the spread of all the subjects has been accounted for and that--except for the loss of two scale types (out of five) in the Manipulation task due to the nature of the task (refer to Sections 6.4.2.5.1.2. and 5.3.) - the development is similarly patterned irrespective of Task. The continuum for this development ranges from highly deviant but simple IL forms, where only one negative operator is used for all situations of negation, to acceptable variants as the continuum approximates the TL. During these approximation processes, the continuum increases in complexity, through the incorporation of more and more variants and through the learners' increasing awareness of the TL system, until his/her IL takes the form of the highly complex system of the target.

The extreme simplicity of the learners' initial grammar rules out the possibility that the starting point of IL continuum is the highly complex system of the NL. Evidence supporting this argument lies in the fact that the subjects' NL English, has a complicated system of negation (Section 4.2.9.2.1). (Unfortunately, we are not able to make any comparison with other studies, simply because there are no such studies). Thus, in spite of NL transfer evident in the learners' performance at the initial stages, especially in the Translation task (Section 7.2.2. ), it is this writer's opinion that an explanation based on general developmental processes is more satisfactory than an explanation based on direct interference/transfer from the NL. To put it differently, the starting point of the continuum cannot be the highly complex system of the NL. If it is anything to do with the NL, it may be said that this is "the mother tongue stripped of all specific features" (Corder, 1981a).

The second aspect which warrants discussion has been brought up before (Sections 6.5. and 7.3.0.), namely that the stages are not linear, discrete stages but they overlap within each learner's variable performance. Hence, examination of Figure (7.3.), reveals that some learners are examples of more than one stage.

This is also true because the stages are implicationally ordered, e.g. categorical non-realization of /lam/ (Stage 4) implies categorical realization of /la:/ (Stage 3).

#### 7.3.1.2. Interrogation

The results in Chapter 6 regarding the second syntactic area: Interrogation realization, points to a well established developmental sequence, in which the following continua emerge:

Tasks combined	Translation	Manipulation
1. Positive Y/N Qs.	Positive Wh-Qs.	Positive Y/N Qs.
2. Positive Wh-Qs.	Positive Interrogation	Positive Interrogation
3. Positive Interrogation	Total Interrogation	Positive Wh-Qs.
4. Total Interrogation	Positive Y/N Qs.	Total Interrogation
5. Negative Wh-Qs.	Negative Wh-Qs.	Negative Wh-Qs.
6. Negative Interrogation	Negative Interrogation	Negative Interrogation

Given the differences remarked on above between orders obtained in learners' performance on the two tasks, one obvious candidate in accounting for the ordering of interrogative types, is the Task (Section 6.2.). Considerable discussion of some of the factors which may be relevant in arriving at a plausible explanation for the implicational ordering of these interrogative types was presented in Section (6.4.3.7.). In that discussion the nature of the two tasks was highlighted.

Another factor determining the implicational ordering is the interrogative type. It is apparent that the least favoured interrogative types are Negative Wh-Qs. and Negative Interrogation. This is in accord with the finding that the formation of Arabic negation is more difficult than that of interrogation.

The status of the Positive Interrogation (Yes/No and Wh-Qs.) is different from that of the Negative Interrogative element. The

placement of the Positive Interrogative element does not require the realization of this element as a tense marker (hence changing the tense of the verb), so that the non-acquisition of this syntactic rule does not affect the categorical realization of Positive Interrogation. Samdi's (1979) results support this finding. His conclusion is that:

"the [Arabic] interrogative structure is somewhat simpler than English. It does not involve syntactic transformation, it is acquired quite early without errors and difficulty".

#### Wh- Questions

As for Wh-question particles, the order on both tasks was:

1. Which; 2. How; 3. When/Where/Why; 4. What; 5. Who

The analysis (Section 6.4.3.6.1.) shows that WHO and WHICH Qs. are statistically different than the other 5 Wh-Q. particles - which are not significantly different from each other. It is also evident that WHICH is the least favoured Q. particle, while WHO is the most favoured.

It is difficult enough to find a plausible explanation for the implicational ordering of these Wh-Q. particles. Since, no one explanation for the favouring of WHO over the other Wh-Q. particles immediately presents itself, three factors which may be relevant to any explanation will be tentatively proposed in this discussion.

One explanation draws on evidence of the frequency of the types. In general textual usage it seems to be agreed that WHICH Qs. are less frequent than for example WHO Qs. This is related to the functions of the two interrogative types. WHICH Qs. are used in a fairly restricted range of meanings. In English:

"which is used both with personal and non-personal nouns but is selective, in that it has anaphoric or cataphoric definite reference" (Quirk *et al.* 1972: 216).

Arabic WHICH is also selective and has a definite reference. It is also used with personal and non-personal nouns.



According to Halliday (1970: 25), the Wh-element has a high functional load, since it expresses the roles of the speaker and hearer as one who requests communicative action and one who provides a specific piece of information. Hence, "the intrinsic theme of Wh-Q. is the Wh element" (Halliday, op. cit.). Givon (1979b: 217) points out that in Wh-Q. constructions, the focus is in the interrogative element while the rest of the sentence is presupposed:

<u>Focus</u>	<u>Presupposed</u>
(i) Where?	
(ii) Where	going/go?
(iii) Where	you going?
(iv) Where	you are going?
(v) Where	are you going?

Semantically, there is no reduction in meaning between sentences (iii - v); while in (i) the subject and verb, the presupposed given information, are deleted but can be retrieved in the situational context. The deleted elements from (i) to (v) show their degree of importance in information and semantic value. If we view the sequence of acquisition in a functional, semantic framework, it becomes clear why lack of tense or inflection are not basic to communication; their rules are more syntactic.

Following Halliday and Givon's arguments, if the Wh-element is not frequently used, then it will be acquired in later stages. Since Wh-Q. particle is the intrinsic theme of Wh-Qs.

Such factors, however, cannot be considered to provide a satisfactory explanation of this order without any consideration of the syntax of the Wh-Q. particles.

Looking at Table (4.5.), we notice that the Arabic interrogative particles:

- (i) WHERE, WHY, WHEN, HOW and WHAT Qs. have the same structure: QP + Verb + (Subject)
- (ii) WHICH Qs. have the following structure QP + Object + Verb + Subject

(iii) WHO Qs. have different structures: QP + V + (Object)

An examination of Table (6.27) shows that learners' performance on HOW Qs. is not significantly different from that on WHERE, WHY and WHEN. Thus, the linguistic complexity of the grammatical structure may determine its order of appearance and use in the learners' ILs (Section 3.3.6.1.). Such a proposal is supported by the findings that WHICH Q. particle is acquired in later stages, while WHO Qs. are the most favoured Wh.Qs.

Such an explanation, however, is clearly not sufficient on its own, since WHAT Qs. are significantly different from HOW, despite the fact that both have the same structure. However, WHAT Qs. are not statistically different from WHERE, WHY and WHEN Qs.

One possible factor in the order sequence is NL. In comparing L1 and L2 structures (Section 4.2.9.3.1. mainly Table 4.5.), the nature of the L1 to influence the acquisition of L2 structures is regarded as a possibility. The existence of the Main Verb in the simple tense (either present/past) as well as the deletion of the Subject, make the structure of English WHO Qs. similar to Arabic WHO Qs. In the other six Wh-Qs. the Arabic subject follows its verb, but the subject proceeds the verb in English. This is in accord with the belief that the characteristics of the L1 may 'facilitate' or not 'facilitate' SL learning according to its similarity or dissimilarity in structures with the SL (Corder 1978b: 99).

#### 7.3.2. Developmental Sequences for Negative and Interrogative Structures: Discussion

Researchers in SLA are still looking for adequate theories to account for the invariant orders/sequences found. What have been offered by L1 and L2 researchers so far have not been empirically borne out as being entirely satisfactory.

In the following sub-sections, we will look at some factors that are suggested as determinants of developmental sequences.

##### A. Frequency

Brown (1973) contributes much to the reasons for the order of acquisition of morphemes such as syllabic stress, frequency,

semantic and grammatical roles. He seems to emphasize frequency, semantic and grammatical complexity as determinants of order. Empirical investigations, however, reveal that frequency does not correlate with the order found ( $\rho = .26$ ). Brown (op. cit: 362) concludes that:

"no relation has been demonstrated to exist between parental frequencies and child's order of acquisition"

In SL studies, Larsen-Freeman (1975) reports that her data correlates with Brown's frequency counts, thus, she believes that frequency still may be a possible hypothesis. Dulay et al. (1982), on the other hand, are pessimistic about frequency as an explanation of sequence of development.

#### B. Universal Processes/Grammar

We have discussed (Section 7.1.2.) the theoretical assumptions regarding universal processes of language acquisition. They are innate cognitive mechanisms which probably dictate the order and sequences reported by researchers on morpheme acquisition, negation, interrogation etc. Beyond stating these broad observations, linguists, psychologists, psycholinguists and neurobiologists are still attempting to solve the mystery of universal processes. A possible 'universal' in language acquisition relates to the neurological constraints on processing linguistic information and the finite span of immediate memory. Miller (1956) discussing some neurological factors (e.g. limitations on memory and storage of linguistic material), emphasizes the phenomenon of schematization or recoding in memory of a large amount of material by "chunking" into bits, because the immediate memory cannot hold more than  $7 \pm 2$  'chunks' "where a chunk is a meaningfully coded unit" of information (Clark and Clark 1977: 137). It is possible that the representation and storage of new information (in this case new SL material) is even less than  $\pm 7$ . If that is so, then there should be a principle of selectivity to eliminate less relevant elements from the more relevant ones.

Such a principle has been recognized by linguists such as Chomsky (1980b), Chomsky and Fodor (1980): the organism's inborn predisposition to select quickly and without mistake a specific working hypothesis about relevant stimuli. It has also been observed that:

"given the small capacity in the immediate memory span, the selectivity of such storage is important in child language learning" (Ervin-Tripp, 1973: 270)

Psychologists like Mehler (1963) (Cited in Piattelli-Palmarini 1980: 200) and neurobiologists like Changeux (1980: 194) have emphasized that learning is a selective process "to learn is to eliminate". The notion is supported by Chomsky and Fodor (op. cit.) who believe that there are innate and highly specific filters or discriminative criteria to select and to eliminate. Hence, actual functioning elements tend to be fixed, and inactive ones tend to decay.

In language acquisition, Braine (1971) believes that frequency and recurrence prevent the decay of stored information. This implies that new information is more likely to be decayed. Brown (1973) has observed that -ing is very stable (90%) while be comes much later. Perhaps this is due to the fact that the progressive morpheme -ing is more frequent, because it is invariant, while be is comparatively less frequent since it has five allomorphs (i.e. am, is, are, was, were). In the context of the selectivity principle -ing will be retained but be will be temporarily eliminated.

Perhaps a stronger argument for the selection principle can be based on meaning and function. The importance of the semantic function of the morpheme rather than its frequency is discussed by Ervin-Tripp (1973: 273). Slobin (1971: 26-27) has observed that it is possible to store form and meaning independent of each other, but that the:

"underlying meaning of a sentence is more persistent [...] in memory than the surface structure in which the meaning is expressed".

In this context, -ing is more likely to be stored in memory because it has high information value as aspect marker. Be,

on the other hand, is a redundant feature until it is marked for tense and number (Brown 1973).

In our data, the first step of acquiring negation is the more general negative particle /la:/. The higher specificity of /lam/ (+ tense: Past), /lan/ (+ Tense: Future) and /laysa/ (+ Number + Gender) makes them likely candidates for a later acquisition. The gradual acquisition of the full form of, for example, /lan/ (Section 6.5.2.) is an example of the step by step selection of elements in a negative particle which starts with the more general negator /la:/.

The assumption that functional and communicative considerations dictate the lingua-cognitive mechanisms to process those elements with high information value first, is empirically supported by the 2-3 word sentences in early naturalistic acquisition. Studies of English as L1 and L2 abound with "telegraphic"-type sentences, which are stripped of function words, and inflections. These basic structures N + N/V/Adj (e.g. Daddy go); Wh + V/N (e.g. Where Kitty?) and No + N/V/Adj (e.g. No want) are strings of language which carry the major meaning of a sentence.

Another possible explanation of developmental sequences is the notion of markedness in universal grammar. Sections (3.3.6. and 5.1. Hypothesis 1.4.). Before going any further it is first necessary to determine what the unmarked categories for negation would be. Suggested evidence for determining markedness or lack of it includes the frequency of the category and the behaviour of this category in simple registers, aphasic disturbance etc. In simple registers, operations like negation are expressed analytically and then synthetically which means that the operation appears as a free morpheme rather than an affix in simple English register.

In the available literature of the acquisition of Arabic as L1 (Section 2.2.2.3.2.2.), Omar (1970) and Samdi (1979) reported

the realization of /la:/ (no) as the first stage of the acquisition of negation.

Our analyses (Chapter 6) also reveal that the initial stages are characterized by the use of /la:/ (no/not) as the sole negative operator. The next step arises from the increasing awareness of the other negative particles: /lam/ and /lan/. In this case rather than having one negative operator, the learners have 3 operators each marked for specific function. However, the categorical realization of /lam/ and /lan/ only comes when learners are aware that the negative particles also function as tense markers. The negator /laysa/ is more marked since it has to be inflected for gender and number.

To conclude this argument then, the reader is aware of the inadequacy of any one explanation to account for the developmental sequences. This however is understandable since language is an extremely complex phenomenon, involving the interactions of different factors. It is perhaps profitable to look at these factors within a single comprehensive framework which will consider factors like: (a) neurological (e.g. limitations on memory and storage of linguistic material); (b) cognitive/psychological (e.g. universal process; mental apparatus for linguistic processing in perception and production and strategies); (c) social and communicational (interaction processes in language contact situations, the semantic and functional value in communication) and (d) physiological/physical (e.g. adult SL learner's usual inability to produce the phonemes unique in the SL). The list is not exhaustive, but a guideline to possible factors.

#### 7.4. SUMMARY AND CONCLUSION OF CHAPTER 7

In this Chapter, the IL continuum as a developmental one which increases in complexity has been discussed, with supporting data from the areas studied.

The learners' system is also shown to be a system of variable rules which is permeable to the characteristics of the tasks.

Variability as a function of tasks differences has been analyzed and discussed with reference to strategies used.

Sequences of development for the areas investigated have been presented and an attempt made to explain the sequences within universal, semantic-functional framework.



## CHAPTER EIGHT

### CONCLUSION

This study set out to provide a description of the acquisition of some aspects of Arabic by English learners in a foreign language context. We have been concerned with the acquisition of negation and interrogation.

The findings should be considered directly applicable to the sample populations. However, assuming that the sample is representative of the population, that the measures used in the study are valid and reliable, and that the analysis of the data is appropriate to test the general and specific hypotheses formulated in Chapters Five and Six, then the results have direct application to the population from which the sample was drawn. Thus, although this study does not aspire to make universal claims, some interesting conclusions may be drawn from it.

#### 8.1. INTERLANGUAGE CONTINUUM

The results of this study enable an evaluation of their contribution to the validation of the IL development continuum model of SLA (Section 3.1.5.). The two salient characteristics of this type of continua were found to be its recreational nature and its increasing complexity. Rather than starting at the fully-complex system of the NL and being equally complex all through the developmental process, the continuum was found to start at some simple basic grammar, universal in its characteristics, with the complexity increasing until the fully complex system of the TL is attained.

##### A. Variability in Interlanguage

Drawing on the empirical evidence presented in this work and in other studies, it can be speculated that the IL system is permeable to different influences (e.g. time/length of exposure to the TL, task, structure, NL, the amount of formal instruction received, the individual learner's learning style and personality ). Thus, it is a system of variable rules. Variability has been described and discussed according to three main factors: Level/Time, Task and Structure.

Systematicity, however, was found to underlie the learners' variable behaviour along all dimensions. Hence, variability is not random and unexplained.

Diachronic variability (variability due to exposure to TL) results from learning, which progresses over a period of time. The results reveal that the process of acquisition is a gradual development from basic semantax along a continuum which increases in complexity over time. The process is complex because it involves the recordings of elements, and their restructurings within the IL system. When new elements are entered, fresh analysis (of meaning and form in the input data), mapping together of meaning and form (syntactic and phonological) and representation must be made (Ervin-Tripp 1973). Thus, the IL of the learners as this study confirms, is a dynamic system since there is constant rule formulation, hypothesis testing and hypothesis-revising (about the TL) by the learner.

However, some linguistic elements (phrases or even whole sentences) are stored as unanalyzed 'chunks' or patterns. Eventually such unanalyzed routines would be analyzed, otherwise they would be limited in number.

Synchronic variability is also evident in our study. Synchronic variability in a learner's variable performance is explained as a function of task differences. These tasks are defined by a set of criteria related to differential accessibility and retrieval conditions. Variable or categorical performances by learners indicate that the IL system is fluid and unstable for the learner at the lower or middle point of the continuum (i.e. Levels 1, 2 and 3), but fairly stable across tasks for those at the higher points of the continuum (Levels 4 and 5).

#### B. Developmental Sequences

A picture emerges of learners' acquisition of SL syntax being an organic, highly ordered process. One of the innovations of

this study has been the use of Implicational Scales to indicate what the route of the SLA process would be for a given individual learner. A general property of the Scales is that of elaboration and sequent change towards the TL forms; i.e. they indicate that the learner would elaborate his IL system by such processes as increasing conditions on the applicability of semantic and syntactic features and by getting further up into implicational hierarchies and learning the appropriateness conditions for stylistic variation. These implicational hierarchies were shown to govern the variability in the learners' production of Arabic negation and interrogation. As such, the findings indicate that underlying the learners' SL production, at least within the scope of this study, systems exist which guide the realization of features and thus their development. As a result, continua of increasing complexity were able to be defined in terms of the realization of syntactic features within each area of the SL syntax under investigation.

## 8.2. THE ROLE OF THE NATIVE LANGUAGE

The implicational analyses have shown that the IL continuum is one that is developmental and one that is expanding in complexity from a 'basic semantax'. It also implies that the influence of the NL in constructing syntax in SL is minimal. Having stated that, the findings of this investigation give rise to broader implications and invite the possibility of speculation concerning the influence of the NL on SLA.

As a result of this study, it has been established that despite an overall similarity between learners in terms of the order of acquisition of features of syntax, examples exist which at least in some cases appear to be attributable to the NL of the learners (Section 7.2.2.). Whilst some forms of CA (Section 2.2.1.) may in certain restricted cases help to provide an explanation of the learners' errors, in many cases it provides no such help. This being the case CA has little predictive power. Generally, even when NL may be successfully invoked to explain learners' ILs, cognitive and linguistic factors seem to be more pertinent in

attempts to explain learners' systems. Such factors include derivational and semantic complexity and typological markedness (Sections 3.3.6.2. and 3.3.6.3. respectively) and possibly also the nature of the human brain's processing capacity and mechanisms.

Taken as a whole, then, the findings of this investigation provide support for SLA in adult learners being largely a developmental process only indirectly mediated by the mother tongue of the learner. The NL plays a part in the learners acquisition process since it is a knowledge which the SL learner already has and which he can make use of in his TL production especially when he does not have the necessary knowledge of the TL features to be communicated.

### 8.3. SUGGESTIONS FOR FURTHER STUDIES

Our study raises as many questions as it answers. Therefore it is suggested that further research might seek:

- a) To identify sequences of stages by ASL learners from different linguistic backgrounds. Such research will make it possible to identify factors that primary determinants of ASL learners' acquisition. Thus, the role of NL may be identified.
- b) Longitudinal data reflecting various kinds of learning environments that could serve to evaluate the findings of cross-sectional studies of SL order of acquisition of Arabic grammatical structure.
- c) To determine the effect of specified ASL methodology on order of acquisition or rate of learning of Arabic.
- d) To compare the production of ASL learners in two learning environments: host-language context vs. foreign-language context.

## APPENDICES

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Appendix 1: (I) Translation Task. Part A = Interrogation

PLEASE TRANSLATE THE FOLLOWING FROM ENGLISH INTO ARABIC.  
MAKE ANY GRAMMATICAL ADJUSTMENTS WHERE NECESSARY.

1. Who read the letter?
2. How are you ?
3. What did Mohammed read ?
4. Why are they here ?
5. When can you travel ?
6. Where is he going ?
7. Has he been here lately ?
8. Which car took her to school ?
9. Did he tear the letter ?
10. Which is your favourite ?
11. Who are we then ?
12. Which letter didn't Marriam send ?
13. Don't you have any friends ?
14. Where have you been ?
15. When did Ali manage to escape ?
16. Can anyone help me ?
17. Which train is going to London ?
18. Who is going home ?
19. How was the exam ?
20. Do you want me to stay with you ?
21. Who was here ?
22. Where were you last week ?
23. Why should I help ?
24. What have you eaten ?
25. When does he go to school ?
26. Where is your daughter ?
27. Which letter did he receive ?
28. Is this book new ?
29. Where can they play ?
30. What is he going to study ?
31. When was it sunny ?
32. Why does he fly to New York every month ?
33. Who can study that ?
34. Is he going home ?
35. Who tore the letter ?
36. Which letter did he write ?
37. How did Mary receive the letter ?
38. Where did John read the letter ?
39. When did Ahmed write the letter ?
40. What was that ?
41. Why did Ahmed tear the letter ?
42. Is this the letter which the ambassdor sent ?
43. Is he abroad ?
44. Which letter didn't Ahmed write ?
45. How are you going home ?
46. Is that true ?
47. Where did Mary receive the letter ?
48. When does he usually go to school ?
49. What have you been doing lately ?
50. Why is she alone .
51. Who is there ?
52. Which book are you interested in ?
53. How was your trip ?
54. Is she beautiful ?

55. When is he going home ?
56. What can she do ?
57. Why didn't John write ?
58. Where have you been hiding ?
59. Did he travel in his plane ?
60. Who is staying with you ?
61. How did she manage to escape?
62. Which road should I take ?
63. Is the minister at the airport?
64. When was Ali here ?
65. Why has he been upset all that time ?
66. Where are we then ?
67. Is he going to stay abroad ?
68. Have you seen him lately ?
69. Who has been waiting for you ?
70. Why didn't he manage to escape ?
71. What is this ?
72. Where haven't you been ?
73. Were the conversations successful ?
74. Who is she ?
75. What are we then ?
76. Why should he join the army ?
77. Where is the school ?
78. How can we help ?
79. Is this the message which the ambassdor carried?
80. What didn't he like ?
81. Which way is it ?
82. Which book has he chosen ?
83. When aren't you busy?
84. Was he at school ?



Appendix 1:(I). Translation Task. Part B : Negation

PLEASE TRANSLATE THE FOLLOWING FROM ENGLISH INTO ARABIC.  
MAKE ANY GRAMMATICAL ADJUSTMENTS IF NECESSARY.

1. Ahmed is not going to come.
2. It is not going to rain.
3. I am not going.
4. He is not dead.
5. He did not tell me.
6. They do not usually play in the street.
7. He is not a teacher.
8. You cannot write on the wall.
9. The plane did not arrive yesterday.
10. The car which left the country was not the Prime Minister's.
11. I am not going to give you the newspaper.
12. They are not going away.
13. There is no airport in the town.
14. The capital is not big.
15. The ambassador did not arrive last week.
16. They do not play football everyday.
17. She was not dead.
18. Butchers do not sell vegetables.
19. She couldn't attend the lecture.
20. They are not going to play outside.
21. He is not going to be a teacher.
22. He says it doesn't rain in Summer.
23. This issue is not important.
24. Oil is not far from Doha.
25. The milkman did not come last Friday.
26. She was not in the Gulf last month.
27. She cannot accept the present.
28. They said " It is not sunny in Summer".
29. The car which usually stands there is not the Prime Minister's.
30. She is not going to die.
31. She couldn't say "No".
32. Ali doesn't go to the cinema weekly.
33. Do not clean the blackboard.
34. I did not study Science in the past.
35. They cannot help.
36. He was not dead.
37. The car which he is going to buy is not new.
38. Lesson twenty is not short.
39. He will not come next week.
40. He is not going to put the pen on the table.
41. In this lesson not all the sentences are long.
42. He is not at home.
43. Cats do not eat fruit.
44. I do not sell apples.
45. He did not listen to the teacher.
46. God is not unjust.
47. I cannot lend you my book.
48. I haven't seen him since Friday.
49. The plane is not old.
50. The majority are not Muslims.
51. They said " It is not going to rain this Summer".
52. They are not going to write anything.

53. He does not study hard.

54. I have never seen a man with Kohl in his eyes handsomer than it is in Zeid's eyes.

55. She couldn't watch the T. V.

56. They said it did not rain last Summer.

57. I am not ill.

58. They cannot come today.

59. They are not going to play football with you.

60. They are not Arabs.

61. It is not going to be difficult.

62. She doesn't like reading.

63. He doesn't come every week.

64. Do not take my book.

It should be noted here that the literal translation (pp.408-416) is given for the sake of the non-native speakers of Arabic. Certainly the translation was not supplied for the students.

Appendix 1: (II) Manipulation Task. Part A = Interrogation

Put the following words in the correct order to make Questions.

If you think that some of them have correct order , please

tick ✓ .

- |   |                                |
|---|--------------------------------|
| 1. read(PAST) who the letter              | ١- قرأ من الرسالة              |
| 2. state you how                          | ٢- حالك كيف                    |
| 3. what Mohammed read (PAST)              | ٣- ماذا محمد قرأ               |
| 4. here they why                          | ٤- هنا هم لماذا                |
| 5. when travel can you                    | ٥- متى السفر تستطيع            |
| 6. will go where                          | ٦- سيذهب اين                   |
| 7. was he QUESTION PARTICLE here lately   | ٧- كان هل هنا مؤخراً           |
| 8. which took she to the school car       | ٨- أي أخذتها الى المدرسة سيارة |
| 9. QUESTION PARTICLE the letter tore      | ٩- هل الرسالة مرق              |
| 10. that which prefer it                  | ١٠- الذي أي تفضله              |
| 11. who then we                           | ١١- من إذن نحن                 |
| 12. letter which send it not(PAST)Marriam | ١٢- رسالة أي ترسلها لم مريم    |
| 13. got QUESTION PARTICLE not any friend  | ١٣- لديك أليس أي صديق          |
| 14. was you where                         | ١٤- كنت أين                    |
| 15. Ali when managed the escape           | ١٥- علي متى استطاع الهرب       |
| 16. can anyone (from you) the help        | ١٦- يستطيع هل أحدهم المساعدة   |
| 17. which will go train to London         | ١٧- أي سيذهب قطار الى لندن     |
| 18. will go who to country his            | ١٨- سيذهب من لبلده             |
| 19. how the exam                          | ١٩- كيف الامتحان               |
| 20. QUESTION PARTICLE stay with you       | ٢٠- هل أبقى معك تريدني أن      |
- want me you to

21. was here who ٢١- كان هنا من
22. in the week the last were you where ٢٢- في الاسبوع الماضي كنت أين
23. why must to I help him ٢٣- لماذا يجب أن أساعده
24. ate you what ٢٤- أكلت ماذا
25. go (PRESENT) when to the school ٢٥- يذهب متى الى المدرسة
26. daughter your where ٢٦- ابنتك أين
27. recieved letter which ٢٧- واصلتك رسالة أي
28. the book QUESTION PARTICLE new ٢٨- الكتاب هل جديد
29. can they where the play ٢٩- يستطيعون أين اللعب
30. will study what ٣٠- سوف يدرس ماذا
31. was when sunny the sun ٣١- كانت متى مشرقة الشمس
32. travel why to New York every month ٣٢- يسافر لماذا الى نيويورك كل شهر
33. who can study that ٣٣- من يستطيع دراسة ذلك
34. will go he to country his QUESTION PARTICLE ٣٤- سيذهب لبلده هل
35. tore the letter who ٣٥- مزق الرسالة من
36. wrote which letter ٣٦- كتب أي رسالة
37. Marriam received how the letter ٣٧- مريم تلقت كيف الرسالة
38. Mohammed where read(PAST)the letter ٣٨- محمد أين قرأ الرسالة
39. Ahmed wrote the letter when ٣٩- أحمد كتب الرسالة متى
40. what was that ٤٠- ماذا كان ذلك

41. tore Mohammed why the letter ٤١- مرق محمد لماذا الرسالة
42. QUESTION PARTICLE the letter which sent it this the ambassdor ٤٢- هل الرسالة التي بعثها هي السفير
43. QUESTION PARTICLE in abroad he ٤٣- هل في الخارج هو
44. not(PAST) write Ahmed which letter ٤٤- لم يكتب أحمد أى رسالة
45. how to the country will go you ٤٥- كيف للبلاد ستذهب
46. this QUESTION PARTICLE true ٤٦- هذا هل حقيقة
47. received where Marriam the letter ٤٧- تلقت أين مريم الرسالة
48. when come he the school to usually ٤٨- متى يأتي المدرسة الى عادة
49. were you do what lately ٤٩- كنت تفعل ماذا مؤخراً
50. she alone why ٥٠- هي وحيدة لماذا
51. there who ٥١- هناك من
52. book which you interested in ٥٢- كتاب أى أنت مهتم به
53. were it how your trip ٥٣- كانت كيف رحلتك
54. she QUESTION PARTICLE beautiful ٥٤- هي هل جميلة
55. will go he to country his when ٥٥- سيذهب لبلاده متى
56. what can you to do ٥٦- ماذا تستطيع أن تفعل
57. Mohammed not (PAST) write why ٥٧- محمد لم يكتب لماذا
58. were you where hiding ٥٨- كنت أين مختبئاً
59. travel QUESTION PARTICLE in plane his ٥٩- سافر هل في طائرته

60. with you who stay ٦٠- معك من يسكن
61. could she how the escape ٦١- استطاعت كيف الهرب
62. road should to which take I ٦٢- طريق يجب أن أت يسلكه
63. the minister QUESTION PARTICLE at the airport ٦٣- الوزير هل في المطار
64. was Ali when here ٦٤- كان علي متى هنا
65. was upset he why all that time ٦٥- كان متضايقا لماذا كل هذا الوقت
66. where then we ٦٦- اين إذن نحن
67. in abroad QUESTION PARTICLE will stay he ٦٧- في الخارج هل سيبقى
68. recently QUESTION PARTICLE saw you him ٦٨- مؤخرا هل رأيته
69. wait (for) you who ٦٩- ينتظرك من
70. the escape why can he not (PAST) ٧٠- الهرب لماذا استطع لم
71. this what ٧١- هذا ما
72. where were you not (PAST) ٧٢- اين كنت لم
73. the conversations QUESTION PARTICLE successful ٧٣- المحادثات هل ناجحة
74. she who ٧٤- هي من
75. then what we ٧٥- إذن ماذا نحن
76. should to join he the army why ٧٦- يجب أن ينظم للجيش لماذا
77. the school where ٧٧- المدرسة أين
78. we can how help ٧٨- نستطيع كيف المساعدة



- ٧٩- هذه التي الرسالة حملها هل السفير  
79. this which the letter  
carried QUESTION PARTICLE the ambassador
- ٨٠- لم ماذا يعجبه  
80. not (PAST) why like he
- ٨١- أي طريق هو  
81. which road it
- ٨٢- اختار أي كتاب  
82. chose he which book
- ٨٣- مشغولا لا تكون متى  
83. busy not (PRESENT) is you when
- ٨٤- هل في المدرسة كان  
84. QUESTION PARTICLE in the school was

Appendix 1: (II) Manipulation Task. Part B: Negation

Change the following positive statements into negative ones using the words in the brackets. Make any grammatical adjustments required ( e.g. number, tense, word-order etc.)

1. Ahmed will come (not) FUTURE      ١- أحمد سوف يأتي . ( لن )
2. will rain the sky(not) FUTURE      ٢- سوف تَطْر السَماءُ ( لن )
3. will I go (not) FUTURE      ٣- سأذهب . ( لن )
4. he dead (not)      EQUATIONAL SENTENCE      ٤- إنه ميت . ( ليس )
5. he tell me (not) PAST      ٥- أخبرني . ( لم )
6. play they in the street (not) PRESENT      ٦- يلعبون في الشارع . ( لا )
7. he teacher (not)      EQUATIONAL SENTENCE      ٧- إنه مدرّس . ( ليس )
8. you can the writing on the wall (not) PRESENT      ٨- تستطيع الكتابة على الحائط . ( لا )
9. the plane came (not) PAST      ٩- الطائرة وصلت . ( لم )
10. the car which left the country was for Prime Minister (not) PAST      ١٠- السيارة التي غادرت البلاد كانت لرئيس الوزراء . ( لم )
11. will I give you the newspaper (not) FUTURE      ١١- سأعطيك الجريدة . ( لن )
12. will go they away (not) FUTURE      ١٢- سوف يذهبون بعيدا . ( لن )
13. airport in the town (not)      EQUATIONAL SENTENCE      ١٣- مطار في المدينة . ( ليس )
14. the capital big (not)      EQUATIONAL SENTENCE      ١٤- العاصمة كبيرة . ( ليس )
15. arrived the ambassador (not) PAST      ١٥- وصل السفير . ( لم )
16. play they football (not) PRESENT      ١٦- يلعبون كرة القدم . ( لا )
17. was she dead (not) PAST      ١٧- كانت ميتة . ( لم )

18. the butchers sell the vegetables (not) PRESENT (لا) - ١٨- الجزارون يبيعون الخضراوات .
19. could she attending the lecture (not) PAST (لم) - ١٩- استطاعت حضور المحاضرة .
20. will play they in outside (لن) - ٢٠- سيلعبون في الخارج .
21. will become he teacher (not) FUTURE (لن) - ٢١- سوف يصبح مدرسا .
22. say he: rain the sky in the Summer (not) PRESENT (ليس) - ٢٢- يقول : تمطر السماء في الصيف .
23. this the issue important (not) EQUATIONAL SENTENCE (ليس) - ٢٣- هذه القضية مهمة .
24. the oil far from Doha (not) EQUATIONAL SENTENCE (ليس) - ٢٤- الزيت بعيد عن الدوحة .
25. the milkman came (not) PAST (لم) - ٢٥- باع الحليب أتى .
26. was she in the Gulf(not) PAST (لم) - ٢٦- كانت في الخليج .
27. she can to accept the present (not) PRESENT (لا) - ٢٧- تستطيع أن تقبل الهدية .
28. said they it sunny in the SUMMER (not) EQUATIONAL SENTENCE (ليس) - ٢٨- قالوا : إنها مشرقة في الصيف .
29. the car which stands usually there for Prime minister(not) EQUATIONAL SENTENCE (ليس) - ٢٩- السيارة التي تقف عادة هناك لرئيس الوزراء .
30. will die she (not) FUTURE (لن) - ٣٠- سوف تموت .
31. could she to say "No" (not) PAST (لم) - ٣١- استطاعت أن تقول : " لا " .
32. Ali go (PRESENT) to the cinema weekly (not) PRESENT (لا) - ٣٢- علي يذهب الى السينما اسبوعيا .

From now on, the words between the brackets will not be supplied. The instructions are as previously given.

- ٢٣- امسح السبورة • ( أمرية ) [ Imperative ] 33. you clean the board.
- ٢٤- درست المعلم في العاضي • 34. studied I the Science in the past
- ٢٥- يستطيعون المساعدة • 35. can they the help
- ٢٦- السيارة التي سيشتريها جديدة • 36. the car which will he buy it new
- ٢٧- الدرس العشرون قصير • 37. the lesson the twenty short
- ٢٨- كان ميت • 38. was he dead
- ٢٩- سوف يأتي • 39. will he come
- ٤٠- سوف يضع القلم على الطاولة • 40. will put he the pen on the table
- ٤١- في هذا الدرس كل الجمل طويلة • 41. in this the lesson all the sentences long
- ٤٢- هو في المنزل • 42. he in the house
- ٤٣- القطط تأكل الفاكهة • 43. the cats eat the fruit
- ٤٤- أنا أبيع تفاحا • 44. I sell apples
- ٤٥- استمع الى الدرس • 45. listen he to the teacher
- ٤٦- الله ظالم • 46. God unjust
- ٤٧- أستطيع إعطائك كتابي • 47. can I lend you book my
- ٤٨- رأيته منذ الجمعة • 48. saw I him since the Friday
- ٤٩- الطائرة قديمة • 49. the plane old
- ٥٠- الغالبية مسلمون • 50. the majority Muslims
- ٥١- قالوا : ستمطر السماء هذا الصيف. 51. said they : will rain the sky this the Summer
- ٥٢- سوف يكتبون شيئا ما • 52. will write they something

53. study he hard      • يدرس بجهد •
54. saw I a man handsomer in eyes his the Kohl than it in eyes (of) Zeid      • رأيت رجلا أحسن في عينيه الكحل منه في عين زيد •
55. could she watching the T.V.      • استطاعت مشاهدة التلفاز •
56. said they rained the sky in the summer the last      • قالوا : امطرت السماء الصيف الماضي •
57. I ill      • أنا مريضة •
58. can they the coming today      • يستطيعون الحضور اليوم •
59. will play they football with you      • سوف يلعبون كرة القدم معك •
60. they Arabs      • هم عرب •
61. will is it difficult      • سوف تكون صعبة •
62. she like (PRESENT) the reading      • إنها تحب القراءة •
63. he come every week      • إنه يأتي كل أسبوع •
64. you take book my      [IMPERATIVE] (أمرية) • خذ كتابي •

APPENDIX 2A: Questionnaire

SCHOOL / UNIV. / COLLEGE : \_\_\_\_\_

AGE : \_\_\_\_\_

SEX : (PLEASE TICK) F ☐ M ☐

FIRST LANGUAGE: \_\_\_\_\_

WHY ARE YOU LEARNING ARABIC ?

1. interested in the Arabic language ☐
2. interested in the Arabic culture ☐
3. interested in Islam ☐
4. interested in Oriental Christianity ☐
5. to get a degree ☐
6. any other reason(s) (PLEASE SPECIFY)

\_\_\_\_\_

\_\_\_\_\_

HAVE YOU BEEN IN ANY ARABIC-SPEAKING COUNTRY ?

YES ☐ NO ☐

IF YES :

HOW LONG HAVE YOU BEEN THERE ?

1. One year ☐
2. More than one year ☐  
PLEASE SPECIFY NUMBER OF YEARS \_\_\_\_\_
3. Less than one year ☐  
PLEASE SPECIFY NUMBER OF MONTHS / DAYS \_\_\_\_\_

HAVE YOU BEEN IN A SCHOOL / CLASS THERE ?

YES ☐ NO ☐

IF YES :

FOR HOW LONG ?

1. One year ☐
2. More than one year ☐  
PLEASE SPECIFY NUMBER OF YEARS \_\_\_\_\_
3. Less than one year ☐  
PLEASE SPECIFY NUMBER OF MONTHS / DAYS \_\_\_\_\_

HAVE YOU BEEN LEARNING THE LANGUAGE :

At school only ☐At school and in other environments ☐In other environments only ☐ (PLEASE SPECIFY)

\_\_\_\_\_

DO YOU KNOW ANY OTHER LANGUAGE(S) ?

YES ☐ NO ☐

IF YES:

1. What language(s) ?

\_\_\_\_\_

2. How good are you in Arabic ?

WRITING

SPEAKING

EXCELLENT

☐☐

VERY GOOD	<input type="checkbox"/>	<input type="checkbox"/>
GOOD	<input type="checkbox"/>	<input type="checkbox"/>
POOR	<input type="checkbox"/>	<input type="checkbox"/>
VERY POOR	<input type="checkbox"/>	<input type="checkbox"/>

This questionnaire as well as the following test are to be conducted for the purpose of research. The information given by you will be treated as strictly confidential. The performance of this test would in no way affect a student's assessment of University/ Class examination. Please do not hesitate to write exactly what you think. This would be extremely helpful in making this research project successful.

Obviously it is important that we receive as many completed questionnaires and tests as possible. We do appreciate your help.

THANK YOU VERY MUCH  
HAIFA AL-BUANAIN



Appendix 2B: Characteristics of Subjects and Acquisition Scores

ACQUISITION SCORES						
<u>Sub.</u> <u>No.</u>	<u>Level</u>	<u>L O E</u> <u>in months</u>	<u>Age</u> <u>in years</u>	<u>Sex</u>	<u>TRANSLATION</u>	<u>MANIPULATION</u>
35	1	0	20	F	21.571	40.857
39	1	0	21	M	21.857	40.286
11	1	0	20	F	23.429	40.429
28	1	0	na	F	26.286	42.143
31	1	0	na	F	26.286	42.429
02	1	0	19	F	27.286	43.143
37	1	0	na	na	28.286	44.857
25	1	0	20	M	29.000	43.143
22	1	0	20	M	29.571	44.286
26	1	0	21	M	30.000	45.000
53	1	6	na	na	32.571	- 1
09	2	7	na	F	42.714	56.429
17	2	6	na	M	43.286	58.429
27	2	0	21	F	44.286	58.571
29	2	0	na	M	45.143	58.571
52	2	12	na	F	45.429	59.429
03	2	0	20	M	46.429	60.143
32	2	12	na	F	47.571	60.571
24	2	0	na	F	49.143	61.286
41	2	0	na	F	49.143	61.714
43	2	8	na	M	49.143	62.286
50	2	0	na	M	49.143	62.143
33	3	12	na	M	57.286	69.143
51	3	16	na	M	58.000	68.000
21	3	6	20	F	58.429	72.571
18	3	6	21	F	59.143	71.429
14	3	6	21	F	59.714	72.714
10	3	24	na	F	60.429	72.857
01	3	14	22	F	60.714	71.000
07	3	16	22	M	60.714	- 1
13	3	9	27	F	61.286	71.429
34	3	2	21	F	63.857	74.857
38	3	18	na	M	63.857	75.143
04	3	16	24	M	67.000	76.134
44	4	6	na	F	70.286	83.571
15	4	24	24	F	71.429	83.000
12	4	3	23	F	72.000	84.143
45	4	0	na	F	73.286	85.857
05	4	24	37	M	73.571	83.143
40	4	6	na	F	74.714	85.714
08	4	8	22	F	75.857	85.714
46	4	12	na	F	75.857	86.429
20	4	3	22	F	76.429	85.286
48	4	6	na	F	76.571	86.143
36	4	6	na	M	76.857	84.143

Appendix 2B contd/:

<u>Sub. No.</u>	<u>Level</u>	<u>ACQUISITION SCORES</u>				
		<u>L O E</u> <u>in months</u>	<u>Age</u> <u>in years</u>	<u>Sex</u>	<u>TRANSLATION</u>	<u>MANIPULATION</u>
55	4	16	na	F	77.857	86.571
56	5	0*	29	M	83.286	94.143
47	5	9	na	M	83.429	92.286
06	5	6	26	M	83.714	- 1
19	5	2	24	F	84.143	93.286
42	5	12	na	F	84.571	93.143
54	5	0*	50	F	84.714	93.571
49	5	9	26	M	85.429	91.857
23	5	14	27	M	90.571	96.000
30	5	18	na	M	92.006	96.429
16	5	6	26	M	94.571	98.429

LOE = Length of exposure to the TL in an Arabic-speaking environment

-1 = missing

na = not available

\* this subject embraced Islam and has many Arab friends (i.e. his/her exposure to Arabic is not merely through classes)

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II Negation

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Key to Appendix 3.1.

Scores on Translation Task are displayed first.  
 Manipulation Task includes missing data.

First row = Sentence Number  
 First column = Student Number  
 t = translation; M = Manipulation;  
 p = positive; n = negative



whot	1	11	18	21	33	35	51	60	69	74
1	4	4	4	1	2	4	4	4	4	4
2	4	2	2	2	2	4	4	2	4	4
3	4	1	4	4	2	4	4	2	4	4
4	4	4	4	4	2	4	4	1	4	4
5	4	4	4	4	1	4	4	1	4	4
6	4	4	4	4	1	4	4	1	4	4
7	4	4	4	4	1	4	4	1	4	4
8	4	4	4	4	1	4	4	1	4	4
9	4	4	4	4	1	4	4	1	4	4
10	4	4	4	4	1	4	4	1	4	4
11	4	4	4	4	1	4	4	1	4	4
12	4	4	4	4	1	4	4	1	4	4
13	4	4	4	4	1	4	4	1	4	4
14	4	4	4	4	1	4	4	1	4	4
15	4	4	4	4	1	4	4	1	4	4
16	4	4	4	4	1	4	4	1	4	4
17	4	4	4	4	1	4	4	1	4	4
18	4	4	4	4	1	4	4	1	4	4
19	4	4	4	4	1	4	4	1	4	4
20	4	4	4	4	1	4	4	1	4	4
21	4	4	4	4	1	4	4	1	4	4
22	4	4	4	4	1	4	4	1	4	4
23	4	4	4	4	1	4	4	1	4	4
24	4	4	4	4	1	4	4	1	4	4
25	4	4	4	4	1	4	4	1	4	4
26	4	4	4	4	1	4	4	1	4	4
27	4	4	4	4	1	4	4	1	4	4
28	4	4	4	4	1	4	4	1	4	4
29	4	4	4	4	1	4	4	1	4	4
30	4	4	4	4	1	4	4	1	4	4
31	4	4	4	4	1	4	4	1	4	4
32	4	4	4	4	1	4	4	1	4	4
33	4	4	4	4	1	4	4	1	4	4
34	4	4	4	4	1	4	4	1	4	4
35	4	4	4	4	1	4	4	1	4	4
36	4	4	4	4	1	4	4	1	4	4
37	4	4	4	4	1	4	4	1	4	4
38	4	4	4	4	1	4	4	1	4	4
39	4	4	4	4	1	4	4	1	4	4
40	4	4	4	4	1	4	4	1	4	4
41	4	4	4	4	1	4	4	1	4	4
42	4	4	4	4	1	4	4	1	4	4
43	4	4	4	4	1	4	4	1	4	4
44	4	4	4	4	1	4	4	1	4	4
45	4	4	4	4	1	4	4	1	4	4
46	4	4	4	4	1	4	4	1	4	4
47	4	4	4	4	1	4	4	1	4	4
48	4	4	4	4	1	4	4	1	4	4
49	4	4	4	4	1	4	4	1	4	4
50	4	4	4	4	1	4	4	1	4	4
51	4	4	4	4	1	4	4	1	4	4
52	4	4	4	4	1	4	4	1	4	4
53	4	4	4	4	1	4	4	1	4	4
54	4	4	4	4	1	4	4	1	4	4
55	4	4	4	4	1	4	4	1	4	4
56	4	4	4	4	1	4	4	1	4	4

whom

whot

MISSING INFORMATION

MISSING INFORMATION

[illegible]

	whattp	whatmp	whattn	whatmn
1	3	3	3	3
2	4	4	0	0
3	0	1	2	3
4	4	1	2	0
5	4	1	2	3
6	4	2	3	3
7	4	2	3	4
8	4	2	3	MISSING INFORMATION
9	4	2	3	MISSING INFORMATION
10	4	4	3	4
11	4	4	3	4
12	4	4	3	4
13	4	4	3	4
14	4	4	3	4
15	4	4	3	4
16	4	4	3	4
17	4	4	3	4
18	4	4	3	4
19	4	4	3	4
20	4	4	3	4
21	4	4	3	4
22	4	4	3	4
23	4	4	3	4
24	4	4	3	4
25	4	4	3	4
26	4	4	3	4
27	4	4	3	4
28	4	4	3	4
29	4	4	3	4
30	4	4	3	4
31	4	4	3	4
32	4	4	3	4
33	4	4	3	4
34	4	4	3	4
35	4	4	3	4
36	4	4	3	4
37	4	4	3	4
38	4	4	3	4
39	4	4	3	4
40	4	4	3	4
41	4	4	3	4
42	4	4	3	4
43	4	4	3	4
44	4	4	3	4
45	4	4	3	4
46	4	4	3	4
47	4	4	3	4
48	4	4	3	4
49	4	4	3	4
50	4	4	3	4
51	4	4	3	4
52	4	4	3	4
53	4	4	3	4
54	4	4	3	4
55	4	4	3	4
56	4	4	3	4









whichtp	whichmp	whichntn	whichmn
1	8	12	3
2	10	44	3
3	17	3	0
4	27	0	0
5	36	0	0
6	52	3	3
7	62	4	3
8	81	3	3
9	82	4	3
10	MISSING INFORMATION	5	MISSING INFORMATION
11	MISSING INFORMATION	3	MISSING INFORMATION
12	4	4	4
13	4	1	3
14	4	3	3
15	4	0	0
16	4	0	4
17	4	3	3
18	4	3	4
19	4	6	3
20	4	3	3
21	4	5	4
22	4	1	4
23	4	3	4
24	4	3	6
25	4	3	3
26	4	5	3
27	4	4	4
28	4	3	4
29	4	3	0
30	4	6	4
31	4	3	3
32	4	0	0
33	4	3	3
34	4	3	0
35	4	3	3
36	4	4	3
37	4	3	4
38	4	3	3
39	4	3	0
40	4	0	0
41	4	3	3
42	4	6	3
43	4	3	3
44	4	6	4
45	4	3	4
46	4	4	4
47	4	4	4
48	4	4	4
49	4	4	4
50	4	3	3
51	4	3	3
52	4	3	3
53	4	MISSING INFORMATION	MISSING INFORMATION
54	4	6	4
55	4	4	4
56	4	6	4











Appendix 3.2: Acquisition Scores

No.	L.	<u>Translation</u>			<u>Manipulation</u>		
		TOTAS	MNAS	PCTAS	TOTAS	MNAS	PCTAS
1	3	425	2.872	60.714	497	3.358	71.000
2	1	191	1.291	27.286	302	2.041	43.143
3	2	325	2.196	46.429	421	2.845	60.143
4	3	469	3.169	67.000	533	3.601	76.143
5	4	515	3.480	73.571	582	3.932	83.143
6	5	586	3.959	83.714		missing data	
7	3	425	2.872	60.714		missing data	
8	4	531	3.588	75.857	600	4.054	85.714
9	2	299	2.020	42.714	395	2.669	56.429
10	3	423	2.858	60.429	510	3.446	72.857
11	1	164	1.108	23.429	283	1.912	40.429
12	4	504	3.405	72.000	589	3.980	84.143
13	3	429	2.899	61.286	500	3.378	71.429
14	3	418	2.824	59.714	509	3.439	72.714
15	4	500	3.378	71.429	581	3.926	83.000
16	5	662	4.473	94.571	689	4.655	98.429
17	2	303	2.047	43.286	409	2.764	58.429
18	3	414	2.797	59.143	500	3.378	71.429
19	5	589	3.980	84.143	653	4.412	93.286
20	4	535	3.615	76.429	597	4.034	85.286
21	3	409	2.764	58.429	508	3.432	72.571
22	1	207	1.399	29.571	310	2.095	44.286
23	5	634	4.284	90.571	672	4.541	96.000
24	2	344	2.324	49.143	429	2.899	61.286
25	1	203	1.372	29.000	302	2.041	43.143
26	1	210	1.419	30.000	315	2.128	45.000
27	2	310	2.095	44.286	410	2.770	58.571
28	1	184	1.245	26.286	295	1.993	42.143
29	2	316	2.135	45.143	410	2.770	58.571
30	5	644	4.351	92.000	675	4.561	96.429
31	1	184	1.243	26.286	297	2.007	42.429
32	2	333	2.250	47.571	424	2.865	60.571
33	3	401	2.709	57.286	484	3.270	69.143
34	3	447	3.020	63.857	524	3.541	74.857
35	1	151	1.020	21.571	286	1.932	40.857
36	4	538	3.635	76.857	589	3.980	84.143
37	1	198	1.338	28.286	314	2.122	44.857
38	3	447	3.020	63.857	526	3.554	75.143
39	1	153	1.034	21.857	282	1.905	40.286
40	4	523	3.534	74.714	600	4.054	85.714
41	2	344	2.324	49.143	432	2.919	61.714
42	5	592	4.000	84.571	652	4.405	93.143
43	2	344	2.324	49.143	436	2.946	62.286
44	4	492	3.324	70.286	585	3.953	83.571

Appendix 3.2. contd/

No.	L.	<u>Translation</u>			<u>Manipulation</u>		
		TOTAS	MNAS	PCTAS	TOTAS	MNAS	PCTAS
45	4	513	3.466	73.286	601	4.061	85.857
46	4	531	3.588	75.857	605	4.088	86.429
47	5	584	3.946	83.429	646	4.365	92.286
48	4	536	3.622	76.571	603	4.074	86.143
49	5	598	4.041	85.429	643	4.345	91.857
50	2	344	2.324	49.143	435	2.939	62.143
51	3	406	2.743	58.000	476	3.216	68.000
52	2	318	2.149	45.429	416	2.811	59.429
53	1	228	1.541	32.571		missing data	
54	5	593	4.007	84.714	655	4.426	93.571
55	4	545	3.682	77.857	606	4.095	86.571
56	5	583	3.939	83.286	659	4.453	94.143

Where:

TOT = Total (complete scores = 700)

MN = Mean (number of items = 148)

PCT = Percentage

AS = Acquisition Score

No = Number of Learner

L = Level

Appendix 3.3: Learners' Scores on the Two Tasks in Negation and Interrogation

Total Negation										Total Interrogation									
Manipulation										Manipulation									
Translation										Translation									
No. L	GT	MNGT	PCTGT	GT	MNGT	PCTGT	GT	MNGT	PCTGT	No. L	GT	MNGT	PCTGT	GT	MNGT	PCTGT			
1 3	235	3.672	67.529	177	2.766	50.862	262	3.119	74.432	248	2.952			248	2.952	70.455			
2 1	141	2.203	40.517	95	1.484	27.299	161	1.917	45.739	96	1.143			96	1.143	27.273			
3 2	203	3.172	58.333	140	2.187	40.230	218	2.595	61.932	185	2.202			185	2.202	52.557			
4 3	264	4.125	75.862	209	3.266	60.057	269	3.202	76.420	260	3.095			260	3.095	73.864			
5 4	298	4.656	85.632	247	3.859	70.977	284	3.381	80.682	268	3.190			268	3.190	76.136			
6 5	missing value			292	4.562	83.908		missing value		294	3.500			294	3.500	83.523			
7 3	missing value			180	2.812	51.724		missing value		245	2.917			245	2.917	69.602			
8 4	311	4.859	89.368	257	4.016	73.851	289	3.440	82.102	274	3.262			274	3.262	77.841			
9 2	175	2.734	50.287	115	1.797	33.045	220	2.619	62.500	184	2.190			184	2.190	52.273			
10 3	248	3.875	71.264	178	2.781	51.149	262	3.119	74.432	245	2.917			245	2.917	69.602			
11 1	129	2.016	37.069	53	0.828	15.230	154	1.833	43.750	111	1.321			111	1.321	31.534			
12 4	303	4.734	87.069	239	3.734	68.678	286	3.405	81.250	265	3.155			265	3.155	75.284			
13 3	243	3.797	69.828	185	2.891	53.161	257	3.060	73.011	244	2.905			244	2.905	69.318			
14 3	248	3.875	71.264	171	2.672	49.138	261	3.107	74.148	247	2.940			247	2.940	70.170			
15 4	300	4.687	86.207	234	3.656	67.241	281	3.345	79.830	266	3.167			266	3.167	75.568			
16 5	341	5.328	97.988	335	5.234	96.264	348	4.143	98.864	327	3.893			327	3.893	92.898			
17 2	191	2.984	54.885	117	1.828	33.621	218	2.595	61.932	186	2.214			186	2.214	52.841			
18 3	244	3.812	70.115	178	2.781	51.149	256	3.048	72.727	236	2.810			236	2.810	67.045			
19 5	328	5.125	94.253	285	4.453	81.897	325	3.869	92.330	304	3.519			304	3.519	86.364			
20 4	307	4.797	88.218	261	4.078	75.000	290	3.452	82.386	274	3.262			274	3.262	77.841			
21 3	255	3.984	73.276	170	2.656	48.851	253	3.012	71.875	239	2.845			239	2.845	67.898			
22 1	145	2.266	41.667	81	1.266	23.276	165	1.964	46.875	126	1.500			126	1.500	35.795			
23 5	333	5.203	95.690	318	4.969	91.379	339	4.035	96.307	316	3.762			316	3.762	89.773			
24 2	198	3.094	56.899	126	1.969	36.207	231	2.750	65.625	218	2.595			218	2.595	61.932			
25 1	136	2.125	39.080	75	1.172	21.552	166	1.976	47.159	128	1.524			128	1.524	36.364			
26 1	140	2.187	40.230	73	1.141	20.977	175	2.083	49.716	137	1.631			137	1.631	38.920			
27 2	184	2.875	52.874	113	1.766	32.471	226	2.690	64.205	197	2.345			197	2.345	55.966			

## Appendix 3.3. contd/

<u>Total Negation</u>										<u>Total Interrogation</u>									
Manipulation					Translation					Manipulation					Translation				
No.	L	GT	MNGT	PCTGT	GT	MNGT	PCTGT	GT		GT	MNGT	PCTGT	GT		GT	MNGT	PCTGT		
28	1	137	2.141	39.368	67	1.047	19.253	158		158	1.881	44.886	117		117	1.393		33.239	
29	2	185	2.891	53.161	122	1.906	35.057	225		225	2.679	63.920	194		194	2.310		55.114	
30	5	332	5.187	95.402	320	5.000	91.954	343		343	4.083	97.443	324		324	3.857		92.045	
31	1	145	2.266	41.667	75	1.172	21.551	152		152	1.810	43.182	109		109	1.298		30.966	
32	2	194	3.031	55.747	124	1.937	35.632	230		230	2.738	65.341	209		209	2.488		59.375	
33	3	227	3.547	65.230	155	2.422	44.540	257		257	3.060	73.011	246		246	2.929		69.886	
34	3	259	4.047	74.425	199	3.109	57.184	265		265	3.155	75.284	248		248	2.952		70.455	
35	1	132	2.062	37.931	47	0.734	13.506	154		154	1.833	43.750	104		104	1.238		29.545	
36	4	305	4.766	87.644	270	4.219	77.586	284		284	3.381	80.682	268		268	3.190		76.136	
37	1	155	2.422	44.540	91	1.422	26.149	159		159	1.893	45.170	107		107	1.274		30.398	
38	3	263	4.109	75.575	196	3.062	56.322	263		263	3.131	74.716	251		251	2.988		71.307	
39	1	125	1.953	35.920	45	0.703	12.931	157		157	1.869	44.602	108		108	1.286		30.682	
40	4	305	4.766	87.644	255	3.984	73.276	295		295	3.512	83.807	268		268	3.190		76.136	
41	2	200	3.125	57.471	130	2.031	37.356	232		232	2.762	65.909	214		214	2.548		60.795	
42	5	329	5.141	94.540	289	4.516	83.046	323		323	3.845	91.761	303		303	3.607		86.080	
43	2	202	3.156	58.046	135	2.109	38.793	234		234	2.786	66.477	209		209	2.488		59.375	
44	4	302	4.719	86.782	224	3.500	64.368	283		283	3.369	80.398	268		268	3.190		76.136	
45	4	306	4.781	87.931	233	3.641	66.954	295		295	3.512	83.807	280		280	3.333		79.545	
46	4	310	4.844	89.080	249	3.891	71.552	295		295	3.512	83.807	282		282	3.357		80.114	
47	5	325	5.078	93.391	277	4.328	79.598	321		321	3.821	91.193	307		307	3.655		87.216	
48	4	310	4.844	89.080	258	4.031	74.138	293		293	3.488	83.239	278		278	3.310		78.977	

Appendix 3.3. contd/

<u>Total Negation</u>										<u>Total Interrogation</u>									
Manipulation					Translation					Manipulation					Translation				
No.	L.	GT	MNGT	PCTGT	GT	MNGT	PCTGT	GT	MNGT	PCTGT	GT	MNGT	PCTGT	GT	MNGT	PCTGT			
49	5	327	5.109	93.965	305	4.766	87.644	316	3.762	89.773	293	3.488							
50	2	198	3.094	56.897	127	1.984	36.494	237	2.821	67.330	217	2.583							
51	3	215	3.359	61.782	159	2.484	45.690	261	3.107	74.148	247	2.940							
52	2	188	2.937	54.023	106	1.656	30.460	228	2.714	64.773	212	2.524							
53	1		missing value		77	1.203	22.126		missing value		151	1.798							
54	5	326	5.094	93.678	287	4.484	82.471	329	3.917	93.466	306	3.643							
55	4	306	4.781	87.931	262	4.094	75.287	300	3.571	85.227	283	3.369							
56	5	334	5.219	95.977	285	4.453	81.897	325	3.869	92.330	298	3.548							

Where: GT = Grand Total (= 348 for Negation and 352 for Interrogation)

MN = Mean  
PCT = Percentage  
No. = Number  
L = Level

ETA = 0.9898    ETA SQUARED = 0.9798



Appendix 3.4. Contd/: One-Way ANOVA: Acquisition Scores. Manipulation Task

FILE ACQLISTN (CREATION DATE = 20/01/86)  
SURFILE MANI

DESCRIPTION OF SUBPOPULATIONS						
CRITERION VARIABLE	PCTAS					
BROKEN DOWN BY LEVEL						
VARIABLE	CCOE	VALUE LABEL	SUM	MEAN	STD DEV	VARIANCE
FOR ENTIRE POPULATION						
LEVEL			3750.2852	70.7601	17.9847	323.4456
LEVEL	1.	FIRST	426.5713	42.6571	1.7512	3.0667
LEVEL	2.	SECOND	659.5713	59.9610	1.8539	3.4371
LEVEL	3.	THIRD	795.2856	72.2987	2.4821	6.1611
LEVEL	4.	FOURTH	1019.7142	84.9762	1.3005	1.6914
LEVEL	5.	FIFTH POST GRAD.	849.1428	54.2492	2.1620	4.6740

TOTAL CASES = 56  
MISSING CASES = 3 OR 5.4 PCT.

COMPUTED VALUES FOR PERCENTAGES

CRITERION VARIABLE PCTAS

ANALYSIS OF VARIANCE						
VARIABLE	CCOE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ
LEVEL	1.	FIRST	426.5713	42.6571	1.7512	27.6000
LEVEL	2.	SECOND	659.5713	59.9610	1.8539	34.3711
LEVEL	3.	THIRD	795.2856	72.2987	2.4821	61.6105
LEVEL	4.	FOURTH	1019.7142	84.9762	1.3005	18.6054
LEVEL	5.	FIFTH POST GRAD.	849.1428	94.3492	2.1620	37.3922
WITHIN GROUPS TOTAL			3750.2852	70.7601	1.9342	179.5752

ANALYSIS OF VARIANCE				
SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	SIG.
BETWEEN GROUPS	16639.798	4	4159.950	1111.919 0.0000
LINEARITY	16459.537	1	16459.537	4257.686 0.0000
DEV. FROM LINEARITY	189.261	3	63.087	16.863 0.0000
R = 0.5890 R SQUARED = 0.9781				
WITHIN GROUPS	179.579	48	3.741	
ETA = 0.5946 ETA SQUARED = 0.5893				

SUBFILE TRANS  
FILE NEGATION (CREATION DATE = 11/12/00)

# DESCRIPTION OF SUBPOPULATIONS

CRITERION VARIABLE BROKEN DOWN BY	PCTGT LEVEL
1. AGE	
2. SEX	
3. RACE	
4. RELIGION	
5. EDUCATION	
6. OCCUPATION	
7. INCOME	
8. MARRIAGE	
9. CHILDREN	
10. CITIZENSHIP	
11. RESIDENCE	
12. VOTING RECORD	
13. PARTY AFFILIATION	
14. POLITICAL IDEOLOGY	
15. POLITICAL ACTIVITY	
16. POLITICAL BELIEFS	
17. POLITICAL OPINIONS	
18. POLITICAL ATTITUDES	
19. POLITICAL BEHAVIOR	
20. POLITICAL INTEREST	
21. POLITICAL KNOWLEDGE	
22. POLITICAL PARTICIPATION	
23. POLITICAL ENGAGEMENT	
24. POLITICAL INVOLVEMENT	
25. POLITICAL COMMITMENT	
26. POLITICAL MOTIVATION	
27. POLITICAL EFFICACY	
28. POLITICAL SKEWNESS	
29. POLITICAL BIAS	
30. POLITICAL PREJUDICE	
31. POLITICAL DISCRIMINATION	
32. POLITICAL OPPRESSION	
33. POLITICAL PERSECUTION	
34. POLITICAL TORTURE	
35. POLITICAL DEATH	
36. POLITICAL EXILE	
37. POLITICAL REFUGEE	
38. POLITICAL ASYLUM	
39. POLITICAL PROTECTION	
40. POLITICAL SHELTER	
41. POLITICAL HIDEOUT	
42. POLITICAL ESCAPE	
43. POLITICAL SURVIVAL	
44. POLITICAL RESILIENCE	
45. POLITICAL ENDURANCE	
46. POLITICAL PERSISTENCE	
47. POLITICAL DETERMINATION	
48. POLITICAL COURAGE	
49. POLITICAL BRAVERY	
50. POLITICAL VALIANTNESS	
51. POLITICAL HEROISM	
52. POLITICAL GALLANTRY	
53. POLITICAL VALOR	
54. POLITICAL COURAGEOUSNESS	
55. POLITICAL BRAVERYNESS	
56. POLITICAL VALIANTNESS	
57. POLITICAL HEROISM	
58. POLITICAL GALLANTRY	
59. POLITICAL VALOR	
60. POLITICAL COURAGEOUSNESS	
61. POLITICAL BRAVERYNESS	
62. POLITICAL VALIANTNESS	
63. POLITICAL HEROISM	
64. POLITICAL GALLANTRY	
65. POLITICAL VALOR	
66. POLITICAL COURAGEOUSNESS	
67. POLITICAL BRAVERYNESS	
68. POLITICAL VALIANTNESS	
69. POLITICAL HEROISM	
70. POLITICAL GALLANTRY	
71. POLITICAL VALOR	
72. POLITICAL COURAGEOUSNESS	
73. POLITICAL BRAVERYNESS	
74. POLITICAL VALIANTNESS	
75. POLITICAL HEROISM	
76. POLITICAL GALLANTRY	
77. POLITICAL VALOR	
78. POLITICAL COURAGEOUSNESS	
79. POLITICAL BRAVERYNESS	
80. POLITICAL VALIANTNESS	
81. POLITICAL HEROISM	
82. POLITICAL GALLANTRY	
83. POLITICAL VALOR	
84. POLITICAL COURAGEOUSNESS	
85. POLITICAL BRAVERYNESS	
86. POLITICAL VALIANTNESS	
87. POLITICAL HEROISM	
88. POLITICAL GALLANTRY	
89. POLITICAL VALOR	
90. POLITICAL COURAGEOUSNESS	
91. POLITICAL BRAVERYNESS	
92. POLITICAL VALIANTNESS	
93. POLITICAL HEROISM	
94. POLITICAL GALLANTRY	
95. POLITICAL VALOR	
96. POLITICAL COURAGEOUSNESS	
97. POLITICAL BRAVERYNESS	
98. POLITICAL VALIANTNESS	
99. POLITICAL HEROISM	
100. POLITICAL GALLANTRY	

VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	VARIANCE	N
FOR ENTIRE POPULATION							
			2952.0110	52.7145	23.8066	566.7553	( 56)
LEVEL	1.	FIRST	223.8505	20.3500	4.7563	22.6222	( 11)
LEVEL	2.	SECOND	389.3677	35.3571	2.8702	8.2378	( 11)
LEVEL	3.	THIRD	619.8275	51.6523	4.5404	20.6152	( 12)
LEVEL	4.	FOURTH	858.9079	71.5757	4.0126	16.1013	( 12)
LEVEL	5.	FIFTH POST GRAD.	860.0574	86.0057	5.5042	30.2963	( 10)

TOTAL CASES = 56

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COMPUTED VALUES FOR PERCENTAGES

CRITERION VARIABLE PCTGT

VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ	N
LEVEL	1.	FIRST	223.8505	20.3500	4.7563	226.2216	( 11)
LEVEL	2.	SECOND	389.3677	35.3571	2.8702	82.3785	( 11)
LEVEL	3.	THIRD	619.8275	51.6523	4.5404	226.7677	( 12)
LEVEL	4.	FOURTH	858.9079	71.5757	4.0126	177.1140	( 12)
LEVEL	5.	FIFTH POST GRAD.	860.0574	86.0057	5.5042	272.6666	( 10)
WITHIN GROUPS TOTAL							( 56)
			2952.0110	52.7145	4.3951	985.1483	( 56)

WITHIN GROUPS TOTAL

## ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	F	SIG.
BETWEEN GROUPS	30166.392	4	7546.598	251.679	0.0000
LINEARITY	30105.285	1	30106.285	1558.568	0.0000
DEV. FROM LINEARITY	80.107	3	26.702	1.382	0.2587
	R = 0.9828	R SQUARED = 0.9658			
WITHIN GROUPS	985.148	51	19.317		
	ETA = 0.9841	ETA SQUARED = 0.9684			

## Appendix 3.5. Contd/: One-Way ANOVA: Scores on Negation. Manipulation Task

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FILE NEGATION (CREATION DATE = 11/12/85)  
SUBFILE MANI

DESCRIPTION OF SUBPOPULATIONS						
VARIABLE	CCODE	VALUE LABEL	SUM	MEAN	STD DEV	VARIANCE
FOR ENTIRE POPULATION			3690.2293	69.6270	20.1983	407.9697
LEVEL	1.	FIRST	397.9884	39.7988	2.5133	6.3169
LEVEL	2.	SECOND	608.6206	55.3291	2.5325	6.4137
LEVEL	3.	THIRD	776.1493	70.5590	4.3813	19.1961
LEVEL	4.	FOURTH	1052.5861	87.7155	1.1567	1.3381
LEVEL	5.	FIFTH POST GRAD.	854.8850	54.5872	1.4447	2.0873
TOTAL CASES =	56					
MISSING CASES =	3 OR 5.4 PCT.					

## COMPUTED VALUES FOR PERCENTAGES

CRITERION VARIABLE PCT6T

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ANALYSIS OF VARIANCE						
VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ
LEVEL	1.	FIRST	397.9884	35.7988	2.5133	56.8520
LEVEL	2.	SECOND	608.6206	55.3291	2.5325	64.1372
LEVEL	3.	THIRD	776.1493	70.5590	4.3813	191.5613
LEVEL	4.	FOURTH	1052.5861	87.7155	1.1567	14.7187
LEVEL	5.	FIFTH POST GRAD.	854.8850	94.9872	1.4447	16.6983
WITHIN GROUPS TOTAL			3690.2293	69.6270	2.6785	344.3675
						( 53)

## ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	F	SIG.
BETWEEN GROUPS	20870.059	4	5217.515	727.248	0.0000
LINEARITY	20584.022	1	20584.022	2865.124	0.0000
DEV. FROM LINEARITY	286.037	3	95.346	13.290	0.0000
	R = 0.9850	R SQUARED = 0.9703			
WITHIN GROUPS	344.367	48	7.174		
	ETA = 0.9919	ETA SQUARED = 0.9838			

FILE Inter (CREATION DATE = 16/01/86)  
SUBFILE TRANS

DESCRIPTION OF SUBPOPULATIONS						
CRITERION VARIABLE	PCTINT					
BROKEN DOWN BY LEVEL						
VARIABLE	CCODE	VALUE LABEL	SUM	MEAN	STD DEV	VARIANCE
FOR ENTIRE POPULATION						
LEVEL			3642.3289	65.0416	18.7121	350.1433
LEVEL	1.	FIRST	367.6135	33.4194	4.6199	21.3435
LEVEL	2.	SECOND	632.1022	57.4638	3.7904	14.3674
LEVEL	3.	THIRD	839.7726	69.9810	1.6800	2.8223
LEVEL	4.	FOURTH	930.1135	77.5095	1.8563	3.4460
LEVEL	5.	FIFTH POST GRAD.	872.7271	87.2727	3.3368	11.1341

TOTAL CASES = 56

COMPUTED VALUES FOR PERCENTAGES

17/01/86

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CRITERION VARIABLE PCTINT

ANALYSIS OF VARIANCE						
VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ
LEVEL			367.6135	33.4194	4.6199	213.4350
LEVEL	1.	FIRST	632.1022	57.4638	3.7904	143.6744
LEVEL	2.	SECOND	839.7726	69.9810	1.6800	31.0455
LEVEL	3.	THIRD	930.1135	77.5095	1.8563	37.9057
LEVEL	4.	FOURTH	872.7271	87.2727	3.3368	100.2068
LEVEL	5.	FIFTH POST GRAD.				
WITHIN GROUPS TOTAL			3642.3289	65.0416	3.2123	526.2673

WITHIN GROUPS TOTAL

ANALYSIS OF VARIANCE						
SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	F	SIG.	
BETWEEN GROUPS	18731.613	4	4682.903	453.815	0.0000	
LINEARITY	17628.162	1	17628.162	1708.326	0.0000	
DEV. FROM LINEARITY	1103.451	3	367.817	35.645	0.0000	
	R = 0.9568	R SQUARED = 0.9154				
WITHIN GROUPS	526.267	51	10.319			
	ETA = 0.9862	ETA SQUARED = 0.9727				

# DESCRIPTION OF SUBPOPULATIONS

VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STDEV	N
FOR ENTIRE POPULATION			3809.6586	71.6804	16.0483	257.5489 ( 53)
LEVEL	1.	FIRST	454.8295	45.4829	1.9794	3.9179 ( 10)
LEVEL	2.	SECOND	709.9431	64.5403	1.8315	3.3545 ( 11)
LEVEL	3.	THIRD	814.2044	74.0186	1.2854	1.6523 ( 11)
LEVEL	4.	FOURTH	987.2158	82.2680	1.7151	2.5415 ( 12)
LEVEL	5.	FIFTH POST GRAD.	843.4658	93.7184	3.0973	9.5930 ( 9)

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**CRITERION VARIABLE PCTINT**

ANALYSIS OF VARIANCE						
VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ
						N
LEVEL	1.	FIRST	454.8295	45.4829	1.9794	35.2611
LEVEL	2.	SECOND	709.9431	64.5403	1.8315	33.5450
LEVEL	3.	THIRD	814.2044	74.0186	1.2854	16.5230
LEVEL	4.	FOURTH	987.2158	82.2680	1.7151	32.3570
LEVEL	5.	FIFTH POST GRAD.	843.4658	53.7184	3.0973	76.7439
WITHIN GROUPS TOTAL			3809.6586	71.8804	2.0126	194.4300
						( 53)

ANALYSIS OF VARIANCE					
SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	F	SIG.
BETWEEN GROUPS	13158.113	4	3299.528	814.573	0.0000
LINEARITY	12818.959	1	12818.959	3164.687	0.0000
DEV. FROM LINEARITY	379.155	3	126.385	31.201	0.0000
R = 0.9784 R SQUARED = 0.9572					
WITHIN GROUPS	194.430	48	4.051		
ETA = 0.9927 ETA SQUARED = 0.9855					

Appendix 3.6: Calculation of Scheffé-TestsSCHEFFÉ - TESTS

These are designed for making all the comparisons among means in a logical grouping of cells (e.g. an interaction), and they are accordingly more conservative than other methods.

1. Start with all the cell means in your grouping, arranged from smallest to largest.
2. Turn all into cell totals by multiplying each by the number of judgements of Ss or wws for the cell  
(= whole data matrix divided by no of means being compared)  
NB NOT INCLUDING CODING.

3. Make a matrix of cell totals.



4. Subtract the total at the left of each line from the totals at the top of all the columns, starting from the first heading total as big as or bigger than the one at the left of the line.
5. Label each column at the top from 2 to n so that the smallest sum is called 2.
6. Now find k (the label on the longest sum), f (the d.f. for the MS error of the interaction you are examining), N (the number of plots in each cell total), MS error (the MS over which the interaction MS was placed to get its F).  
(from the Anova table)
7. Thus armed, find in the F-tables the value at your favourite p-level for F with k-1 and f degrees of freedom ( $F_{k-1,f}$ ). Multiply it by (k-1) to give  $(k-1) F_{k-1,f} = F_s$
8. The level which a difference on your matrix must reach is then

$$\sqrt{2F_s} \quad \sqrt{N MS_e}$$

↑  
Mean square error (from Anova table)

Appendix 3.7A: Performance on Negation (Translation Task)

			Verbal Sentences						Equational Sentences						Grand Total	
			/la:/ (present)			/lam/ (past)			/lan/ (future)			/laysa/				
No.	L.		TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	PCT
39	1		17	1.00	20.00	11	0.69	13.75	9	0.64	9.18	8	0.47	9.41	45	0.70
35	1		14	0.82	16.47	12	0.75	15.00	8	0.57	8.16	13	0.77	15.29	47	0.73
11	1		16	0.94	18.82	15	0.94	18.75	8	0.57	8.16	14	0.82	16.47	53	0.83
28	1		30	1.77	35.29	13	0.81	16.25	11	0.79	11.22	13	0.77	15.29	67	1.05
26	1		30	1.77	35.29	14	0.88	17.50	13	0.93	13.27	16	0.94	18.82	73	1.14
31	1		30	1.77	35.29	27	1.69	33.75	9	0.64	9.18	9	0.53	10.59	75	1.17
25	1		31	1.82	36.47	14	0.88	17.50	14	1.00	14.29	16	0.94	18.82	75	1.17
53	1		29	1.71	34.12	20	1.25	25.00	14	1.00	14.29	14	0.82	16.47	77	1.20
22	1		30	1.77	35.29	20	1.25	25.00	14	1.00	14.29	17	1.00	20.00	81	1.27
37	1		34	2.00	40.00	27	1.66	33.73	13	0.93	13.27	17	1.00	20.00	91	1.42
2	1		42	2.47	49.41	23	1.44	28.75	14	1.00	14.29	16	0.94	18.82	95	1.48
52	2		37	2.18	43.53	35	2.19	43.75	17	1.21	17.35	17	1.00	20.00	106	1.66
27	2		40	2.35	47.06	34	2.13	42.50	20	1.43	20.41	19	1.12	22.35	113	1.77
9	2		41	2.41	48.24	37	2.31	46.25	20	1.43	20.41	17	1.00	20.00	115	1.79
17	2		42	2.47	49.41	36	2.25	45.00	19	1.36	19.39	20	1.18	23.53	117	1.83
29	2		44	2.59	51.77	35	2.19	43.75	25	1.79	25.51	18	1.06	21.18	122	1.91
32	2		48	2.82	56.47	37	2.31	46.25	14	1.00	14.29	25	1.47	29.41	124	1.94
24	2		47	2.77	55.29	43	2.69	53.75	18	1.29	18.37	18	1.06	21.18	126	1.97
50	2		48	2.82	56.47	44	2.75	55.00	15	1.07	15.31	20	1.18	23.53	127	1.98
41	2		48	2.82	56.47	38	2.38	47.50	24	1.71	24.49	20	1.18	23.53	130	2.03
43	2		48	2.82	56.47	40	2.50	50.00	19	1.36	19.39	28	1.65	32.94	135	2.11
3	2		50	2.94	58.82	39	2.44	48.75	23	1.64	23.47	28	1.65	32.94	140	2.19
33	3		51	3.00	60.00	44	2.75	55.00	26	1.86	26.53	34	2.00	40.00	155	2.42
51	3		55	3.24	64.71	50	3.13	62.50	28	2.00	28.57	26	1.53	30.59	159	2.48
21	3		52	3.06	61.18	48	3.00	60.00	40	2.86	40.81	30	1.77	35.29	170	2.66
14	3		58	3.41	68.24	53	3.31	66.25	28	2.00	28.57	32	1.88	37.65	171	2.67
1	3		59	3.47	69.41	54	3.38	67.50	26	1.86	26.53	38	2.24	44.71	177	2.77
18	3		65	3.82	76.47	45	2.81	56.25	41	2.93	41.84	27	1.59	31.77	178	2.78
10	3		52	3.06	61.18	48	3.00	60.00	44	3.14	44.89	34	2.00	40.00	178	2.78
7	3		56	3.29	65.88	51	3.19	63.75	42	3.00	42.86	31	1.82	36.47	180	2.81
13	3		60	3.53	70.59	51	3.19	63.75	38	2.71	38.78	36	2.12	42.35	185	2.89



## Appendix 3.7A contd/

		Verbal Sentences						Equational Sentences						Grand Total	
		/la:/ (present)			/lan/ (past)			/lan/ (future)			/laysa/				
No.	L.	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	PCT
38	3	60	3.53	70.59	56	3.50	70.00	48	3.43	48.98	32	1.88	37.65	196	56.32
34	3	61	3.59	71.77	56	3.50	70.00	40	2.86	40.82	42	2.47	49.41	199	57.18
4	3	63	3.71	74.12	59	3.69	73.75	45	3.21	45.92	42	2.47	49.41	209	60.06
44	4	64	3.77	75.29	57	3.56	71.25	58	4.14	59.18	45	2.65	52.94	224	64.37
45	4	68	4.00	80.00	63	3.94	78.75	57	4.07	58.16	45	2.65	52.94	233	66.95
15	4	65	3.82	76.47	59	3.69	73.75	50	3.57	51.02	60	3.53	70.59	234	67.24
12	4	61	3.59	71.77	57	3.56	71.25	59	4.21	60.20	62	3.65	72.94	239	68.68
5	4	68	4.00	80.00	64	4.00	80.00	51	3.64	52.04	64	3.77	75.29	247	70.98
46	4	68	4.00	80.00	63	3.94	78.75	74	5.29	75.51	44	2.59	51.77	249	71.55
40	4	70	4.12	82.35	65	4.06	81.25	70	5.00	71.43	50	2.94	58.82	255	73.28
8	4	69	4.06	81.18	65	4.06	81.25	74	5.29	75.51	49	2.88	57.65	257	73.85
48	4	72	4.24	84.71	65	4.06	81.25	65	4.64	66.33	56	3.29	65.88	258	74.14
20	4	69	4.06	81.18	65	4.06	81.25	63	4.50	64.29	64	3.77	75.29	261	75.00
55	4	69	4.06	81.18	61	3.81	76.25	70	5.00	71.43	62	3.77	72.94	262	75.29
36	4	68	4.00	80.00	62	3.88	77.50	74	5.29	75.51	66	3.88	77.65	270	77.59
47	5	66	3.88	77.65	66	4.13	82.50	79	5.64	80.61	66	3.88	77.65	277	79.60
56	5	76	4.47	89.41	69	4.31	86.25	75	5.36	76.53	65	3.82	76.47	285	81.89
19	5	72	4.24	84.71	67	4.19	83.75	80	5.71	81.63	66	3.88	77.65	285	81.89
54	5	75	4.41	88.24	69	4.31	86.25	75	5.36	76.53	68	4.00	80.00	287	82.27
42	5	72	4.24	84.71	67	4.19	83.75	81	5.79	82.65	69	4.06	81.18	289	83.05
6	5	76	4.47	89.41	69	4.31	86.25	78	5.57	79.59	69	4.06	81.18	292	83.91
49	5	76	4.47	89.41	70	4.38	87.50	87	6.21	88.78	72	4.24	84.71	305	87.64
23	5	80	4.71	94.12	72	4.50	90.00	88	6.29	89.80	78	4.59	91.77	318	91.38
30	5	79	4.65	92.94	73	4.57	91.25	90	6.43	91.84	78	4.59	91.77	320	91.95
16	5	84	4.94	98.82	78	4.88	97.50	95	6.79	96.94	78	4.59	91.77	335	96.26

Where:

Tot = Total; MN = Mean; PCT = Percentage; L = Level; No. = Number of learner

Complete Scores for:

/la:/ = 85; /lan/ = 80; /lan/ = 98; /laysa/ = 85 Grand Total = 348; Total cases = 56

Appendix 3.7B: Performance on Negation (Manipulation Task)

Verbal Sentences										Equational Sentences										Grand Total					
/la:/( present)					/lan/( past)					/lan/( future)					/laysa/										
No.	L.	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT
39	1	31	1.82	36.47	25	1.56	31.25	35	2.50	35.71	34	2.00	40.00	125	1.95	35.92									
11	1	33	1.94	38.82	31	1.94	38.75	35	2.50	35.71	30	1.77	35.29	129	2.02	37.07									
35	1	36	2.12	42.35	27	1.69	33.75	35	2.50	35.71	34	2.00	40.00	132	2.06	37.93									
25	1	40	2.35	47.06	26	1.63	32.50	34	2.43	34.69	36	2.12	42.35	136	2.13	39.08									
28	1	46	2.71	54.12	24	1.50	30.00	34	2.43	34.69	33	1.94	38.82	137	2.14	39.37									
26	1	42	2.47	49.41	25	1.56	31.25	35	2.50	35.71	38	2.24	44.71	140	2.19	40.23									
2	1	46	2.71	54.12	24	1.50	30.00	35	2.50	35.71	36	2.12	42.35	141	2.20	40.52									
22	1	44	2.59	51.77	28	1.75	35.00	35	2.50	35.71	38	2.24	44.71	145	2.27	41.67									
31	1	42	2.47	49.41	37	2.31	46.25	34	2.43	34.69	32	1.88	37.65	145	2.27	41.67									
37	1	46	2.71	54.12	35	2.19	43.75	35	2.50	35.71	39	2.29	45.88	155	2.42	44.54									
9	2	52	2.18	61.18	48	3.00	60.00	38	2.71	38.78	37	2.18	43.53	175	2.73	50.29									
27	2	57	3.35	67.06	45	2.81	56.25	38	2.71	38.78	44	2.59	51.77	184	2.88	52.87									
29	2	51	3.00	60.00	44	2.75	55.00	47	3.36	47.96	43	2.53	50.59	185	2.89	53.16									
52	2	52	2.18	61.18	48	3.00	60.00	41	2.93	41.84	47	2.77	55.29	188	2.94	54.02									
17	2	56	3.29	65.88	47	2.40	58.75	45	3.21	45.92	43	2.53	50.59	191	2.98	54.89									
32	2	54	3.18	63.53	50	3.13	62.50	44	3.14	44.90	46	2.71	54.12	194	3.03	55.57									
24	2	59	3.47	69.41	53	3.31	66.25	42	3.00	42.86	44	2.59	51.77	198	3.09	56.90									
50	2	55	3.24	64.71	54	3.38	67.50	47	3.36	47.96	42	2.47	49.41	198	3.09	56.90									
41	2	59	3.47	69.41	51	3.19	63.75	46	3.29	46.94	44	2.59	51.77	200	3.13	57.47									
43	2	57	3.35	67.06	54	3.38	67.50	46	3.29	49.94	45	2.65	52.94	202	3.16	58.05									
3	2	58	3.41	68.24	50	3.13	62.50	46	3.29	46.94	49	2.88	57.65	203	3.17	58.33									
51	3	65	3.82	76.47	62	3.88	77.50	35	2.50	35.71	53	3.12	62.35	215	3.36	61.78									
33	3	61	3.59	71.77	58	3.63	72.00	55	3.93	56.12	53	3.12	62.35	227	3.55	65.23									
1	3	65	3.82	76.47	59	3.69	73.75	55	3.93	56.12	56	3.29	65.88	235	3.67	67.53									
13	3	68	4.00	80.00	66	4.13	82.50	58	4.14	59.18	51	3.00	60.00	243	3.79	69.83									
18	3	66	3.88	77.65	57	3.56	71.25	69	4.93	70.41	52	3.06	61.18	244	3.81	70.12									
10	3	65	3.82	76.47	57	3.56	71.25	76	4.43	77.55	50	2.94	58.82	248	3.88	71.26									
14	3	67	3.94	78.82	63	3.94	78.82	63	4.50	64.29	55	3.24	64.71	248	3.88	71.26									
21	3	64	3.77	75.29	64	4.00	80.00	73	5.21	74.49	54	3.18	63.53	255	3.98	73.28									
34	3	67	3.94	78.82	62	3.88	77.50	75	5.36	76.53	55	3.24	64.71	259	4.05	74.43									

## Appendix 3.7B contd./

Verbal Sentences										Equational Sentences					Grand Total				
/la:/ (present)					/lan/ (past)					/lan/ (future)					/laysa/				
No.	L.	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT	TOT	MN	PCT			
38	3	66	3.88	77.65	61	3.81	76.25	76	5.43	77.55	60	3.53	70.59	263	4.11	75.58			
4	3	69	4.06	81.18	64	4.00	80.00	71	5.07	72.45	60	3.53	70.59	264	4.13	75.86			
5	4	76	4.47	89.41	69	4.31	86.25	83	5.93	84.69	70	4.12	82.35	298	4.66	85.63			
15	4	77	4.53	90.59	69	4.31	86.25	83	5.93	84.69	71	4.18	83.53	300	4.69	86.21			
44	4	71	4.18	83.53	66	4.13	82.50	87	6.21	88.78	78	4.59	91.77	302	4.72	86.78			
12	4	76	4.47	89.41	68	4.25	85.00	89	6.36	90.82	70	4.12	82.35	303	4.73	87.07			
36	4	74	4.35	87.06	71	4.44	88.75	87	6.21	88.78	73	4.29	85.88	305	4.77	87.64			
40	4	74	4.35	87.06	72	4.50	90.00	87	6.21	88.78	72	4.24	84.71	305	4.77	87.64			
45	4	75	4.41	88.24	71	4.44	88.75	86	6.14	87.76	74	4.35	87.06	306	4.78	87.93			
55	4	73	4.29	85.88	68	4.25	85.00	86	6.14	87.76	79	4.65	92.94	306	4.78	87.93			
20	4	74	4.35	87.06	73	4.56	91.25	89	6.36	90.82	71	4.18	83.53	307	4.79	88.22			
46	4	76	4.47	89.41	71	4.44	88.75	87	6.21	88.78	76	4.47	89.41	310	4.48	89.08			
48	4	77	4.53	90.59	73	4.56	91.25	86	6.14	87.76	74	4.35	87.06	310	4.84	89.08			
8	4	78	4.59	91.77	70	4.38	87.50	88	6.29	89.80	75	4.41	88.24	311	4.86	89.37			
47	5	49	4.65	92.94	72	4.50	90.00	93	6.64	94.90	81	4.77	95.29	325	5.08	93.39			
54	5	80	4.71	94.12	74	4.63	92.50	92	6.57	93.88	80	4.71	94.12	326	5.10	93.68			
49	5	80	4.71	94.12	75	4.69	93.75	90	6.43	91.84	82	4.82	96.47	327	5.11	93.97			
19	5	82	4.82	96.49	75	4.69	93.75	94	6.71	95.92	77	4.53	90.59	328	5.13	94.25			
42	5	81	4.77	95.29	77	4.81	96.25	95	4.75	96.94	76	4.47	89.41	329	5.14	94.54			
30	5	81	4.77	95.29	76	4.75	95.00	95	4.75	96.94	80	4.71	94.12	332	5.19	95.40			
23	5	83	4.88	97.65	77	4.81	96.25	91	6.50	92.86	82	4.82	96.47	333	5.20	95.69			
56	5	83	4.88	97.65	77	4.81	96.25	93	6.64	94.90	81	4.77	95.29	334	5.22	95.98			
16	5	85	5.00	100.0	80	5.00	100.0	96	6.86	97.96	80	4.71	94.12	341	5.33	97.99			

Where:

Tot = Total; MN = Mean; PCT = Percentage; L = Level; No. = Number of Learner

Complete scores for:

/la:/ = 85; /Lan/ = 80; /lan/ = 98; /laysa/ = 85; Grand Total = 348

Total cases = 56

Missing Cases = 3: Learners' nos: 6, 7 and 53

Table 6.31. Scheffé-Test for Significant Interaction: Wh-Q. by Level

Bill Name	L306	L307	L308	L309	L310	L311	L312	L313	L314	L315	L316	L317	L318	L319	L320	L321	L322	L323	L324	L325	L326	L327	L328	L329	L330	L331	L332	L333	L334	L335	L336	L337	L338	L339	L340	L341	L342	L343	L344	L345	L346	L347	L348	L349	L350																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Bill Total	434.30	738.30	605.20	930.60	932.80	972.40	1005.02	1264.12	1314.50	1352.12	1359.16	1399.20	1420.10	1521.06	1586.10	1599.18	1613.48	1626.06	1656.94	1664.98	1719.08	1763.74	1771.00	1774.74	1815.86	82.54	83.00	83.69	89.79	1366.14	1594.38	1622.64	1659.82	1682.74	2026.74	2030.32	2036.42	2065.42	2085.90	2104.74	2126.74	2136.74	2162.74	2182.74	2192.74	2202.74	2212.74	2222.74	2232.74	2242.74	2252.74	2262.74	2272.74	2282.74	2292.74	2302.74	2312.74	2322.74	2332.74	2342.74	2352.74	2362.74	2372.74	2382.74	2392.74	2402.74	2412.74	2422.74	2432.74	2442.74	2452.74	2462.74	2472.74	2482.74	2492.74	2502.74	2512.74	2522.74	2532.74	2542.74	2552.74	2562.74	2572.74	2582.74	2592.74	2602.74	2612.74	2622.74	2632.74	2642.74	2652.74	2662.74	2672.74	2682.74	2692.74	2702.74	2712.74	2722.74	2732.74	2742.74	2752.74	2762.74	2772.74	2782.74	2792.74	2802.74	2812.74	2822.74	2832.74	2842.74	2852.74	2862.74	2872.74	2882.74	2892.74	2902.74	2912.74	2922.74	2932.74	2942.74	2952.74	2962.74	2972.74	2982.74	2992.74	3002.74	3012.74	3022.74	3032.74	3042.74	3052.74	3062.74	3072.74	3082.74	3092.74	3102.74	3112.74	3122.74	3132.74	3142.74	3152.74	3162.74	3172.74	3182.74	3192.74	3202.74	3212.74	3222.74	3232.74	3242.74	3252.74	3262.74	3272.74	3282.74	3292.74	3302.74	3312.74	3322.74	3332.74	3342.74	3352.74	3362.74	3372.74	3382.74	3392.74	3402.74	3412.74	3422.74	3432.74	3442.74	3452.74	3462.74	3472.74	3482.74	3492.74	3502.74	3512.74	3522.74	3532.74	3542.74	3552.74	3562.74	3572.74	3582.74	3592.74	3602.74	3612.74	3622.74	3632.74	3642.74	3652.74	3662.74	3672.74	3682.74	3692.74	3702.74	3712.74	3722.74	3732.74	3742.74	3752.74	3762.74	3772.74	3782.74	3792.74	3802.74	3812.74	3822.74	3832.74	3842.74	3852.74	3862.74	3872.74	3882.74	3892.74	3902.74	3912.74	3922.74	3932.74	3942.74	3952.74	3962.74	3972.74	3982.74	3992.74	4002.74	4012.74	4022.74	4032.74	4042.74	4052.74	4062.74	4072.74	4082.74	4092.74	4102.74	4112.74	4122.74	4132.74	4142.74	4152.74	4162.74	4172.74	4182.74	4192.74	4202.74	4212.74	4222.74	4232.74	4242.74	4252.74	4262.74	4272.74	4282.74	4292.74	4302.74	4312.74	4322.74	4332.74	4342.74	4352.74	4362.74	4372.74	4382.74	4392.74	4402.74	4412.74	4422.74	4432.74	4442.74	4452.74	4462.74	4472.74	4482.74	4492.74	4502.74	4512.74	4522.74	4532.74	4542.74	4552.74	4562.74	4572.74	4582.74	4592.74	4602.74	4612.74	4622.74	4632.74	4642.74	4652.74	4662.74	4672.74	4682.74	4692.74	4702.74	4712.74	4722.74	4732.74	4742.74	4752.74	4762.74	4772.74	4782.74	4792.74	4802.74	4812.74	4822.74	4832.74	4842.74	4852.74	4862.74	4872.74	4882.74	4892.74	4902.74	4912.74	4922.74	4932.74	4942.74	4952.74	4962.74	4972.74	4982.74	4992.74	5002.74	5012.74	5022.74	5032.74	5042.74	5052.74	5062.74	5072.74	5082.74	5092.74	5102.74	5112.74	5122.74	5132.74	5142.74	5152.74	5162.74	5172.74	5182.74	5192.74	5202.74	5212.74	5222.74	5232.74	5242.74	5252.74	5262.74	5272.74	5282.74	5292.74	5302.74	5312.74	5322.74	5332.74	5342.74	5352.74	5362.74	5372.74	5382.74	5392.74	5402.74	5412.74	5422.74	5432.74	5442.74	5452.74	5462.74	5472.74	5482.74	5492.74	5502.74	5512.74	5522.74	5532.74	5542.74	5552.74	5562.74	5572.74	5582.74	5592.74	5602.74	5612.74	5622.74	5632.74	5642.74	5652.74	5662.74	5672.74	5682.74	5692.74	5702.74	5712.74	5722.74	5732.74	5742.74	5752.74	5762.74	5772.74	5782.74	5792.74	5802.74	5812.74	5822.74	5832.74	5842.74	5852.74	5862.74	5872.74	5882.74	5892.74	5902.74	5912.74	5922.74	5932.74	5942.74	5952.74	5962.74	5972.74	5982.74	5992.74	6002.74	6012.74	6022.74	6032.74	6042.74	6052.74	6062.74	6072.74	6082.74	6092.74	6102.74	6112.74	6122.74	6132.74	6142.74	6152.74	6162.74	6172.74	6182.74	6192.74	6202.74	6212.74	6222.74	6232.74	6242.74	6252.74	6262.74	6272.74	6282.74	6292.74	6302.74	6312.74	6322.74	6332.74	6342.74	6352.74	6362.74	6372.74	6382.74	6392.74	6402.74	6412.74	6422.74	6432.74	6442.74	6452.74	6462.74	6472.74	6482.74	6492.74	6502.74	6512.74	6522.74	6532.74	6542.74	6552.74	6562.74	6572.74	6582.74	6592.74	6602.74	6612.74	6622.74	6632.74	6642.74	6652.74	6662.74	6672.74	6682.74	6692.74	6702.74	6712.74	6722.74	6732.74	6742.74	6752.74	6762.74	6772.74	6782.74	6792.74	6802.74	6812.74	6822.74	6832.74	6842.74	6852.74	6862.74	6872.74	6882.74	6892.74	6902.74	6912.74	6922.74	6932.74	6942.74	6952.74	6962.74	6972.74	6982.74	6992.74	7002.74	7012.74	7022.74	7032.74	7042.74	7052.74	7062.74	7072.74	7082.74	7092.74	7102.74	7112.74	7122.74	7132.74	7142.74	7152.74	7162.74	7172.74	7182.74	7192.74	7202.74	7212.74	7222.74	7232.74	7242.74	7252.74	7262.74	7272.74	7282.74	7292.74	7302.74	7312.74	7322.74	7332.74	7342.74	7352.74	7362.74	7372.74	7382.74	7392.74	7402.74	7412.74	7422.74	7432.74	7442.74	7452.74	7462.74	7472.74	7482.74	7492.74	7502.74	7512.74	7522.74	7532.74	7542.74	7552.74	7562.74	7572.74	7582.74	7592.74	7602.74	7612.74	7622.74	7632.74	7642.74	7652.74	7662.74	7672.74	7682.74	7692.74	7702.74	7712.74	7722.74	7732.74	7742.74	7752.74	7762.74	7772.74	7782.74	7792.74	7802.74	7812.74	7822.74	7832.74	7842.74	7852.74	7862.74	7872.74	7882.74	7892.74	7902.74	7912.74	7922.74	7932.74	7942.74	7952.74	7962.74	7972.74	7982.74	7992.74	8002.74	8012.74	8022.74	8032.74	8042.74	8052.74	8062.74	8072.74	8082.74	8092.74	8102.74	8112.74	8122.74	8132.74	8142.74	8152.74	8162.74	8172.74	8182.74	8192.74	8202.74	8212.74	8222.74	8232.74	8242.74	8252.74	8262.74	8272.74	8282.74	8292.74	8302.74	8312.74	8322.74	8332.74	8342.74	8352.74	8362.74	8372.74	8382.74	8392.74	8402.74	8412.74	8422.74	8432.74	8442.74	8452.74	8462.74	8472.74	8482.74	8492.74	8502.74	8512.74	8522.74	8532.74	8542.74	8552.74	8562.74	8572.74	8582.74	8592.74	8602.74	8612.74	8622.74	8632.74	8642.74	8652.74	8662.74	8672.74	8682.74	8692.74	8702.74	8712.74	8722.74	8732.74	8742.74	8752.74	8762.74	8772.74	8782.74	8792.74	8802.74	8812.74	8822.74	8832.74	8842.74	8852.74	8862.74	8872.74	8882.74	8892.74	8902.74	8912.74	8922.74	8932.74	8942.74	8952.74	8962.74	8972.74	8982.74	8992.74	9002.74	9012.74	9022.74	9032.74	9042.74	9052.74	9062.74	9072.74	9082.74	9092.74	9102.74	9112.74	9122.74	9132.74	9142.74	9152.74	9162.74	9172.74	9182.74	9192.74	9202.74	9212.74	9222.74	9232.74	9242.74	9252.74	9262.74	9272.74	9282.74	9292.74	9302.74	9312.74	9322.74	9332.74	9342.74	9352.74	9362.74	9372.74	9382.74	9392.74	9402.74	9412.74	9422.74	9432.74	9442.74	9452.74	9462.74	9472.74	9482.74	9492.74	9502.74	9512.74	9522.74	9532.74	9542.74	9552.74	9562.74	9572.74	9582.74	9592.74	9602.74	9612.74	9622.74	9632.74	9642.74	9652.74	9662.74	9672.74	9682.74	9692.74	9702.74	9712.74	9722.74	9732.74	9742.74	9752.74	9762.74	9772.74	9782.74	9792.74	9802.74	9812.74	9822.74	9832.74	9842.74	9852.74	9862.74	9872.74	9882.74	9892.74	9902.74	9912.74	9922.74	9932.74	9942.74	9952.74	9962.74	9972.74	9982.74	9992.74	10002.74
L306	19.75	33.35	36.60	42.30	42.40	44.20	46.41	57.46	59.66	61.46	61.76	63.60	64.56	66.23	72.56	72.69	73.44	73.91	75.27	75.68	76.14	80.17	80.50	80.67	82.54	83.00	83.69	89.79	1366.14	1594.38	1622.64	1659.82	1682.74	2026.74	2030.32	2036.42	2065.42	2085.90	2104.74	2126.74	2136.74	2162.74	2182.74	2192.74	2202.74	2212.74	2222.74	2232.74	2242.74	2252.74	2262.74	2272.74	2282.74	2292.74	2302.74	2312.74	2322.74	2332.74	2342.74	2352.74	2362.74	2372.74	2382.74	2392.74	2402.74	2412.74	2422.74	2432.74	2442.74	2452.74	2462.74	2472.74	2482.74	2492.74	2502.74	2512.74	2522.74	2532.74	2542.74	2552.74	2562.74	2572.74	2582.74	2592.74	2602.74	2612.74	2622.74	2632.74	2642.74	2652.74	2662.74	2672.74	2682.74	2692.74	2702.74	2712.74	2722.74	2732.74	2742.74	2752.74	2762.74	2772.74	2782.74	2792.74	2802.74	2812.74	2822.74	2832.74	2842.74	2852.74	2862.74	2872.74	2882.74	2892.74	2902.74	2912.74	2922.74	2932.74	2942.74	2952.74	2962.74	2972.74	2982.74	2992.74	3002.74	3012.74	3022.74	3032.74	3042.74	3052.74	3062.74	3072.74	3082.74	3092.74	3102.74	3112.74	3122.74	3132.74	3142.74	3152.74	3162.74	3172.74	3182.74	3192.74	3202.74	3212.74	3222.74	3232.74	3242.74	3252.74	3262.74	3272.74	3282.74	3292.74	3302.74	3312.74	3322.74	3332.74	3342.74	3352.74	3362.74	3372.74	3382.74	3392.74	3402.74	3412.74	3422.74	3432.74	3442.74	3452.74	3462.74	3472.74	3482.74	3492.74	3502.74	3512.74	3522.74	3532.74	3542.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

Where L=Level; C1=How; C2=What; C3=When; C4=Where; C5=Which

C6=Who; C7=Why

df=288(approx.400); MSE=6.93; No=22; k-1=35

F=1.49; P=0.05; F=1.74; P=0.01

 $F_s=52.15$ ;  $P=0.05$ ;  $F_s=60.9$ ;  $P=0.01$ 

Calculated  $t'_{crit} = 158.97$  \* $p=0.05$

 $t'_{\text{crit}} = 176.93$   $**P=0.01$ 

(+) =Not Significant

Unless stated, all significant beyond P 0.01

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## Abbreviations for Journals

LL= Language Learning  
 IRAL= International Review of Applied Linguistics  
 TESOL Q= Teachers of English to Speakers of Others Languages Quarterly  
 WPB= Working Papers on Bilingualism  
 ISB= Interlanguage Studies Bulletin  
 SSLA= Studies in Second Language Acquisition  
 ELT Journal= English Language Teaching Journal  
 ELR Journal= English Language Research Journal  
 BAAL= British Association for Applied Linguistics  
 RELC Journal=Regional English Language Centre Journal  
 ERIC Journal=Educational Resources Information Centre Journal

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